

Anatomy of a CIA Assassination

Newsweek

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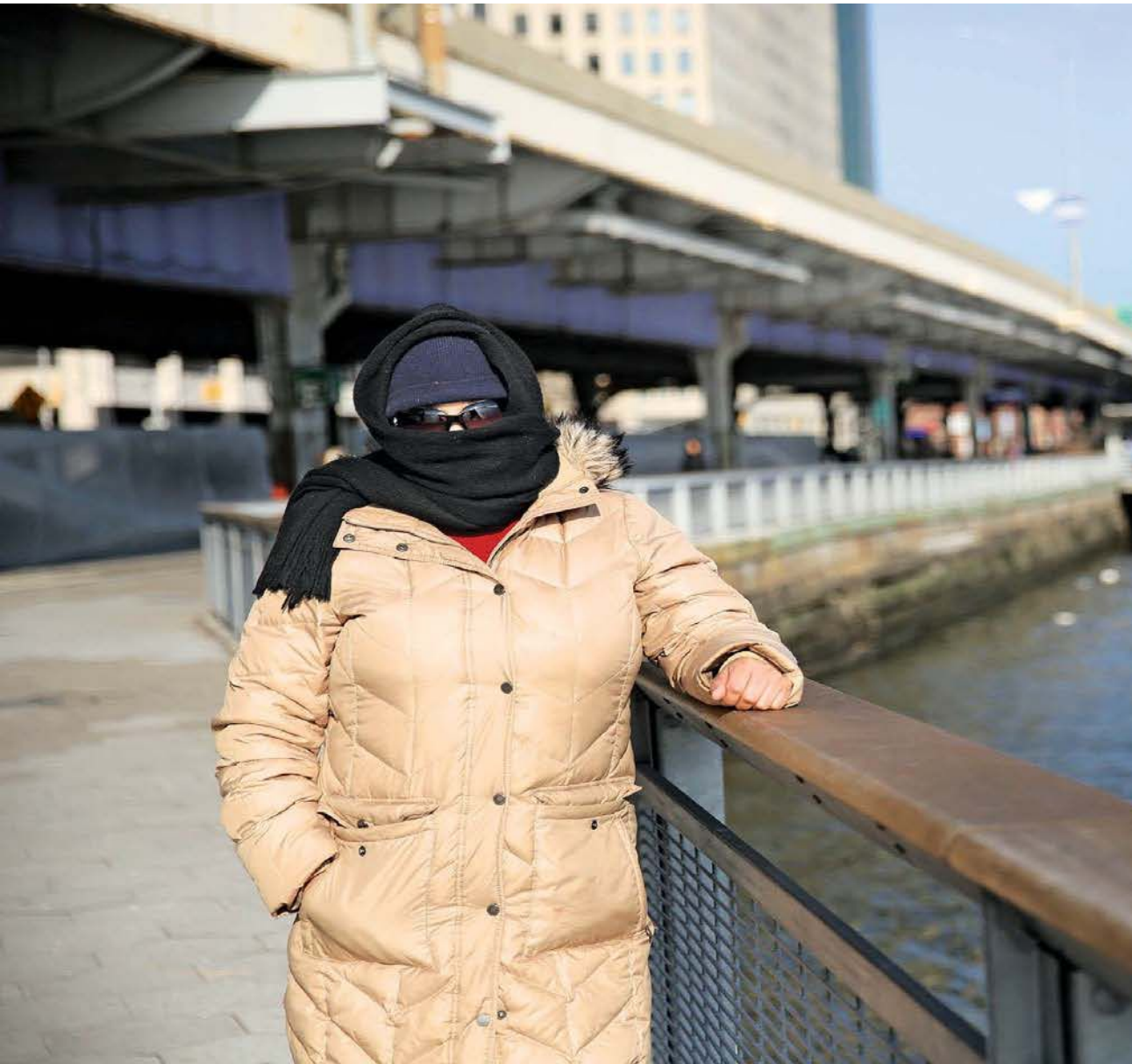
SEX SLAVES IN AMERICA

TRAFFICKING DOWN ON THE FARM

Newsweek

FEATURES

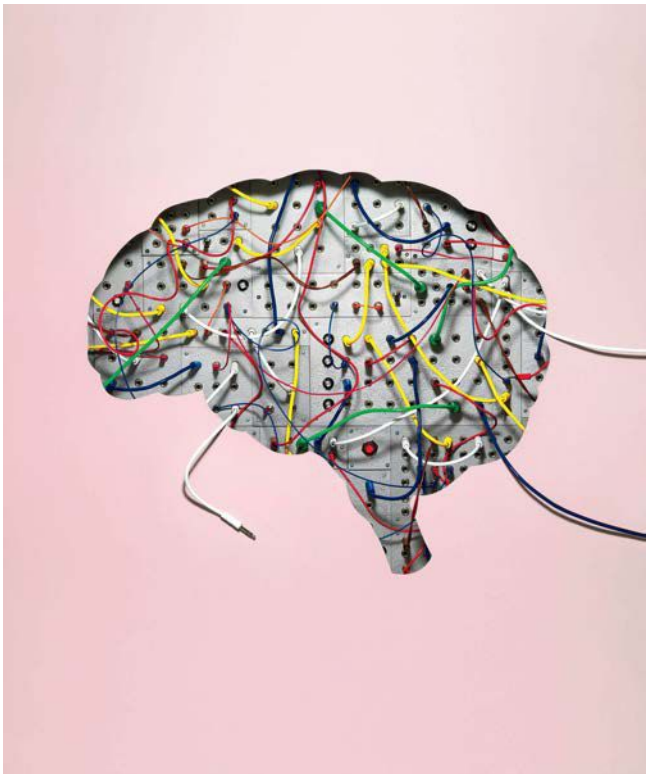
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SEX SLAVES ON THE FARM

Sex trafficking flourishes where men work in isolation; lately, that's meant even the dark corners of America's farms.

BRAIN, HEAL THYSELF



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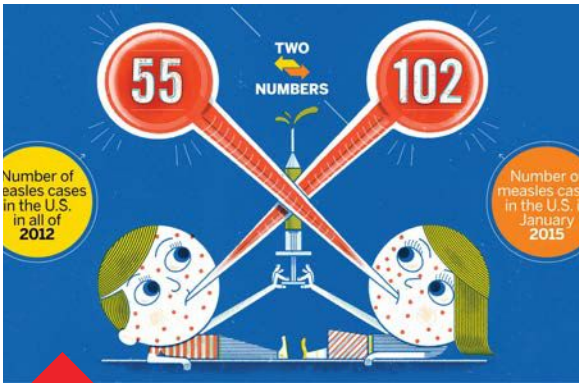
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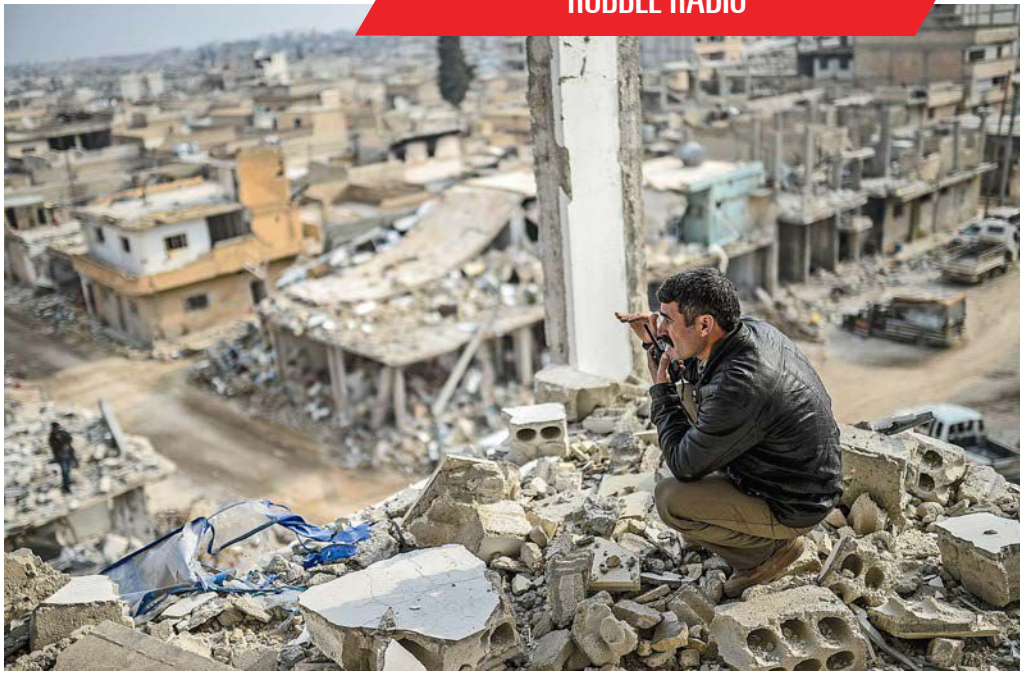
COLD BLOOD



LEFT PROFILE



RUBBLE RADIO





Shaminder Dulai for Newsweek

SEX SLAVES ON THE FARM

SEX TRAFFICKING FLOURISHES WHERE MEN WORK IN ISOLATION; LATELY, THAT'S MEANT EVEN THE DARK CORNERS OF AMERICA'S FARMS.

From the passenger seat of the red Camaro convertible hurtling away from Southampton Road, Janet watched the scenery change from one-story houses to tobacco fields and apple orchards. She had come to Charlotte, North Carolina, to work on a farm, but she wasn't going to be picking—she and the three other women in the car were wearing high

heels and see-through miniskirts, and they felt alone and afraid.

The thought of the violence to come terrified them. It was midday, and after about an hour on the road, the man behind the wheel, whom the women knew as Ricardo, a common fake name traffickers use, turned down a dirt path and stopped at a cluster of cheap cabins that had floors lined with mattresses. These beat-down shacks were home for more than 100 farm workers. In the main farm house nearby, the workers—mostly from Mexico, El Salvador, Honduras and Guatemala—were on their lunch break, eating chicken and rice.

The four women climbed out of the Camaro and went over to sheds near the cabins, where the workers kept their tools. The cement floors inside had crumbled through, exposing big dirt holes. While the women laid down rags, the men, filthy and reeking of sweat after spending all morning in the fields, quickly finished eating and formed lines outside the sheds, with as many as 50 men waiting for a woman. Ricardo stayed by the car, keeping lookout for police or anyone who might try to rob him and the women.

One by one, the men paid \$30 to rape Janet and the other women. Most of them, having gone a long time without sex, lasted only a few minutes with Janet. Some were so violent she was sure they would have seriously hurt or even killed her if it weren't for Ricardo, watching over the operation. She remembers seeing that happen once, to a woman who came without a driver or a pimp; she says the farm workers threw the body in a dump.



Mexican migrant workers pick organic spinach during the fall harvest at Grant Family Farms on Oct. 11, 2011 in Wellington, Colo. Credit: John Moore/Getty

At the end of the day, as the sun was setting, the women handed all the money they'd collected to Ricardo, and they made the drive back to Charlotte. In the car, all Janet wanted to do was rest, but she knew she had to call her pimp, hundreds of miles away, and report how many customers she had had and how much money she made. As soon as she arrived in Charlotte, Janet knew there would be johns waiting for her at the brothel. The next day would be the same routine, and that thought made her hate herself. She felt inhuman, like a machine.

Janet was forced into prostitution in Mexico by a boyfriend named Antonio in 1999; coyotes brought them across the border the following year, and they went to live with Antonio's family in the borough of Queens in New York City, where she was put to work in brothels. Every couple of weeks, a van would take her and other women and girls—some as young as 12—to Charlotte, where she would

spend a week or more, forced to have sex with strangers at a brothel by night and at farm labor camps by day.

Sex trafficking flourishes in areas of male-dominated industries, such as fracking and oil boomtowns, military bases and, as a slew of recent court cases and victim accounts show, farm labor camps. The U.S. Department of State estimates that traffickers bring some 14,500 to 17,500 people into the United States each year.

“These organizations that victimize these women... transport them to where the business is,” says James T. Hayes Jr., special agent in charge of Homeland Security Investigations in New York. Traffickers set up shop in metropolitan areas—they often choose Queens for its central location along the Eastern corridor to cities north and south, plus its big clientele base in New York City—and send women to farms near and far, ranging from Vermont to Florida. Officials don’t know how many women are trapped in this city-to-farm sex pipeline, but experts say the number is growing every year. Keith V. Bletzer, an adjunct faculty member at Arizona State University who has studied prostitution in agricultural areas, says that until recent years, women went to farm labor camps on their own to sell sex out of financial necessity. Now, however, there is an organized crime element, with “other people recognizing that this might be a viable” source of income, he says. Rather than women selling sex to make a living, it’s traffickers bringing them to farms as part of larger international operations.

In some cases, pimps posing as boyfriends lure victims and shuttle them from brothel to brothel. In other instances, coyotes smuggle women across the border and then force or coerce them into selling sex to pay off smuggling fees. The United Nations says criminals who once trafficked weapons and drugs have made women their latest commodity. “It’s hugely profitable,” says Lori Cohen, director of the anti-trafficking initiative at Sanctuary for Families. Smuggled drugs are quickly sold, but with a woman, “you bring her

across the border once and you just keep using her body over and over again until she breaks down,” she explains.

For Janet, who requested that Newsweek refer to her by the name she used most when she was a prostitute, that breakdown took more than a decade. “Your body is being sold,” she says in Spanish through a Sanctuary for Families advocate. “It’s almost like your body is no longer yours.”



Farm workers harvest asparagus in a field near Firebaugh in California's Central Valley. Credit: Matt Black

Her First Time

Widely considered the sex trafficking capital of the world, Tenancingo, Mexico, is two hours southeast of Mexico City. Many of the town’s 10,000 residents are involved in prostitution; for young men, becoming a pimp means joining the family business. “It’s a sex-trafficking city,” says Human Trafficking Intervention Court Judge Toko Serita, “where generations of families and men are engaged in the business.” Men there “recruit” women from elsewhere in Mexico, often by pretending to fall in love with them, and then bring them to Tenancingo, where the forced prostitution begins. From there, many pimps take

their victims to work in Mexico City; some later go to the U.S., where there is more money to be made.

Janet grew up with her grandmother in Puebla, a half-hour drive from Tenancingo. “My childhood was very poor, but I have memories that make me laugh,” she says. One day in 1998, when Janet was 23, she was walking home from her factory job when a car pulled up beside her. “Hi, my name is Ricardo,” the man inside the car said. “Can I accompany you?”

“No,” Janet said. “I don’t know you.”

The man persisted and asked if they could be friends. When they reached Janet’s home, she finally said OK, they could be friends. Having recently split from the abusive father of her young daughter, Janet wasn’t eager to bring someone new into her life. But the man from the car kept showing up. “He was very respectful of me. In Puebla, when a woman gets into a car with a man, the first thing the man does is he starts grabbing her. He wants to take you immediately to bed,” she says. This man, however, “behaved very nicely.”



Lori L. Cohen, Director, Anti-trafficking Initiative for Sanctuary for Families speaks with a client. Credit: Shaminder Dulai for Newsweek

In July 1999, after knowing Ricardo for a little more than year, Janet agreed to move in with his family in Tenancingo, leaving her daughter in the care of her grandmother. But when she arrived, she learned that his name was Antonio, not Ricardo, and that he was a pimp. His family lived in squalor, even worse than where Janet had grown up. Antonio's family slept in one room, and the animals they owned slept in another. Water poured in through the ceiling when it rained, and children ran around barefoot and played with soiled diapers. After six months, Janet decided to leave Antonio, but discovered she was pregnant and stayed.

That's when the abuse began. First, Antonio forced Janet to take pills so she would have a miscarriage. She did. Weeks later, he told her she had to become a prostitute. At first she protested, saying she had worked a good job in a factory and could find work like that again. But he insisted, and eventually she gave in. Her first time selling sex was on the streets of Mexico City. During that time, she recalls, "[the sex] was day and night and I felt terrible." After a year,

Antonio told her that if they went to the U.S., family there could help them find legitimate work. Reluctantly, Janet agreed, and in June 2000 they made their way across the border and to Queens.



In Tenancingo, Tlaxcala, a little town of 10,000 that has become world famous as the center of the country's international sex trafficking trade, families of pimps are known for their large, gaudy homes. Credit: Corey Sipkin/New York Daily News/Getty

‘Set Up to Be Invisible’

The vast majority of the country’s estimated 3 million farmworkers were born outside the U.S. Like Janet, most of them came to America in search of opportunity and, also like Janet, are being steadily ground down by a system working against them. Few suburban supermarket shoppers know that federal labor laws exclude farmworkers from certain rights most Americans take for granted, such as overtime pay, days off and collective bargaining. State by state, advocates have tried to change that, but Big Agriculture usually manages to thwart the efforts.

Seasonal crop farm laborers typically live in barracks for a few months at a time. At year-round livestock farms, workers live in cheap houses or trailers. “The average

citizen wouldn't see them," Renan Salgado of the Worker Justice Center of New York says about where the workers live. "They are set up to be invisible." Because of their undocumented status, workers rarely leave the farms, relying instead on supervisors and middlemen to deliver everything from groceries to medical aid to women.

The scene is a volatile mix, ripe for violence. "People are just bored, and they're lonely," says Gonzalo Martinez de Vedia, also of the Worker Justice Center. "You have an entire population that is sitting at home for an entire season. Single men. There's a lot of drinking, substance abuse."

Workers tend to take out that frustration on female visitors. What happens on the farms, says Cohen, is rape. "I think there's a perception that when...you pay to have sex with someone, that means that you pay for the right to do whatever you want with that woman," she says. "The violence that our clients have experienced at the hands of their buyers is really shocking."



Tenancingo is at the center of the issue of human trafficking. Most people in the town of approximately 10,000 people will either deny or ignore any knowledge of the sequestering young girls from other towns in Tenancingo's giant mansions. Credit: Peggy Peattie/U-T San Diego/ZUMA

Hold the Children Hostage

Antonio had promised a better life for Janet north of the border, but their living conditions in Queens were horrific. “People were sleeping one on top of another, and all the women worked in prostitution,” she says. Antonio’s cousins were pimps, she learned, operating a family ring. Janet still had to sell sex, and a routine developed: Antonio would spend his days playing soccer and billiards, while Janet had to work at brothels in Queens and Boston. Once Antonio learned about the opportunity to sell sex to farmworkers, he began sending Janet to Charlotte. There, a white, one-story, three-bedroom house near the end of a winding road served as a brothel, offering johns a constant rotation of out-of-state women. Janet and the other victims would see men there from 7 at night to 3 in the morning, sleep until 11 a.m. and then be driven out to the farms.

“I felt like an animal,” Janet says. “The men were very aggressive. They would grab me. They were pushing me. They would grab me by the neck. They would penetrate me really hard. So when they finished, it was like my salvation.” Many men appeared to be on drugs; some refused to pay. She tried to make them wear condoms, but sometimes the condoms would break or the men would take them off. Janet says she had so many abortions—always done with Cytotec pills, widely used in the trafficking world—that she lost track of how many. She lived in constant fear. “I didn’t even like to look at them,” she says of her buyers.

Antonio still promised they would get married, and he told Janet he was sending the money she earned back to Mexico, where someone was building them a house. Antonio’s cousins told their victims similar lies to keep them hoping and in line. “The traffickers are canny. They’ve figured out the sort of sweet spot that needs to be exploited,” Cohen says. “It’s almost like a script.” The traffickers would also threaten that if a woman ran away or went to the police, they would harm her family back in Mexico. For one ring that serviced farmworkers, prosecutors learned the pimps went so far as to impregnate their victims just so they could hold the children hostage.

“The fear that the trafficking organizations place into their victims makes it sometimes difficult if not impossible to get a victim to actually admit that they’re a victim,” says James Hayes Jr. from Homeland Security Investigations. Sadly, some victims go to great lengths to protect their traffickers or return to their pimps, despite the help of law enforcement and advocates.

Around 2009, one of the pimps in Antonio’s ring was arrested for domestic abuse, and Antonio fled to Mexico. However, he stayed in contact with Janet by phone and expected her to continue working and wiring him money. Meanwhile, Janet was in touch with her daughter, who was still in Mexico and had medical expenses stemming from an

accident. To cover those expenses, Janet asked Antonio if she could use some of the money she made, but he refused. So she went to the Mexican Consulate in New York City for advice, and after she described her predicament, consulate staff contacted Sanctuary for Families.

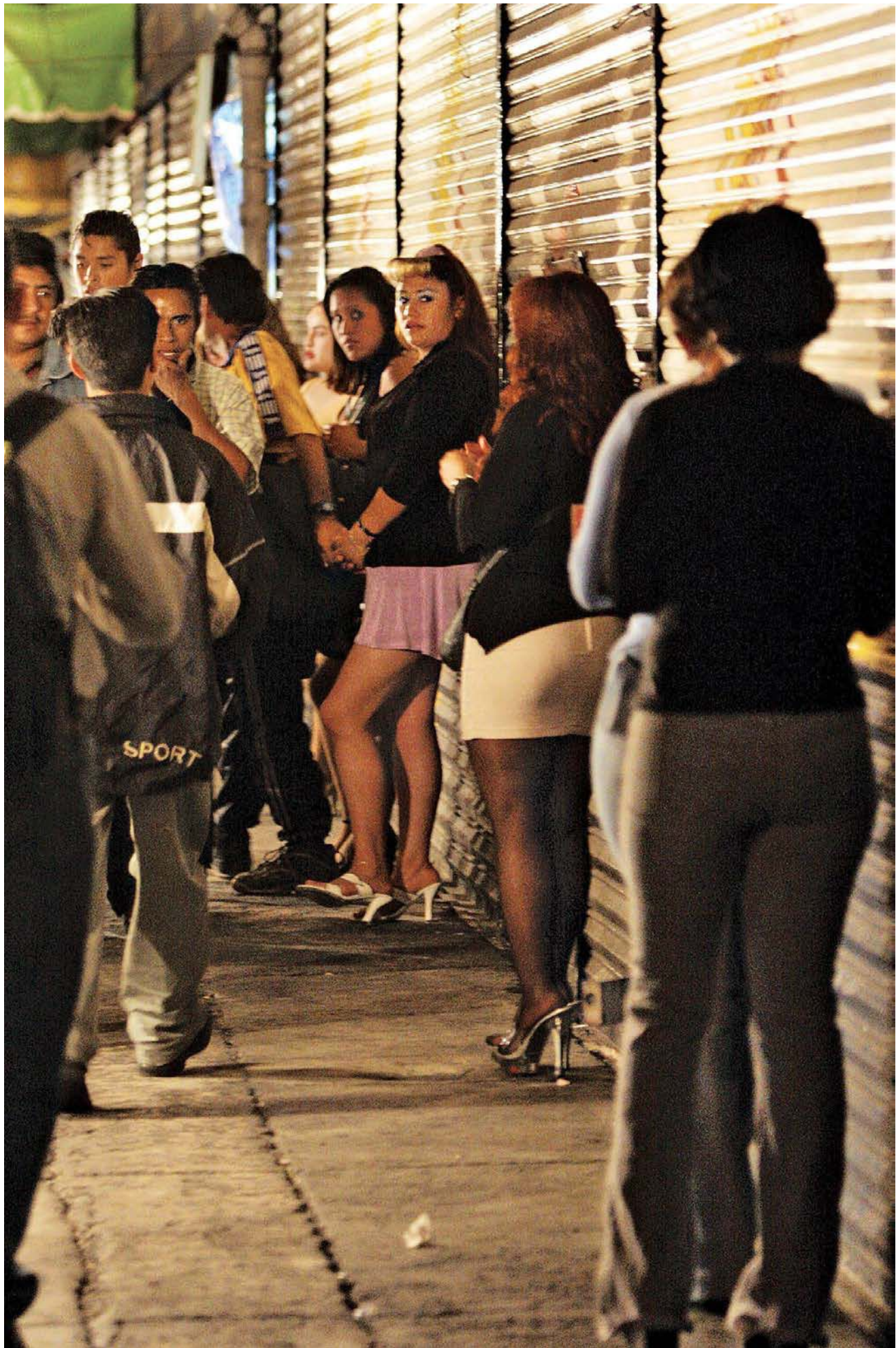
That visit to the consulate set in motion an investigation by U.S. Immigration and Customs Enforcement, beginning in 2010. Investigators conducted surveillance and pored over phone, travel and financial records, in order to identify and locate key members of the ring. With Janet's help, officials rescued 25 victims, arrested the pimps and found Antonio hiding in Mexico. In 2012, officials extradited him, and he was sentenced in June 2014. He and three cousins all pleaded guilty and are now serving sentences ranging from 15 to 22 years.

The path that led Antonio to trafficking became clear in court materials. He was an orphan at the age of 6, after his mother abandoned him and his father died of alcoholism; an uncle in Tenancingo took him in but routinely beat him with a whip and starved him; he grew up without schooling, friends or affection. Coming of age in Tenancingo, his lawyer wrote in a memorandum, Antonio saw "a culture that not only tolerated sex trafficking, but flaunted it with the showy extravagances of its participants." Antonio told his lawyer, "I wanted to be somebody."

The judge sentenced Antonio to 15 years behind bars, plus five years of supervised release. He must register as a sex offender and pay Janet \$1.2 million in restitution, which will come from the money he made as a pimp and whatever he makes in prison job programs. While in prison, he will pay at least \$20 per month, serving as a constant reminder of what he did.

On the day of the sentencing, appearing in a Brooklyn courtroom as Jane Doe No. 1, Janet finally confronted the man who had enslaved her for 11 years. "He did not treat me like a human being. He treated me like a sexual robot," she

said in court. “For years I cried in silence. I carried the scars of Antonio’s abuse every day, but I can no longer be silent. I am here today so Antonio and his family will no longer be able to force another woman into prostitution.”



Prostitutes wait for clients at a street in the Merced neighborhood in Mexico City, March 19, 2005. Credit: Marco Ugarte/AP

‘The Fresh Meat Is Here’

The details from Janet's account are consistent with those of another victim and multiple farmworkers provided to Newsweek. In New York, one former dairy farmworker in Lewis County says that once a week, a man would go to the farm with women and knock on workers' doors, saying, "Llego la carne fresca" ("The fresh meat is here") and "Tu vas a pasar" ("You are up"). Someone who provides services to farmworker camps in upstate New York says that his weekly farm visits coincide with those of the indentured women, and that the workers always tell him to hurry and serve them food before it's their "turn" for sex. Rates with the women range from \$25 to \$60.

"They're essentially prisoners, and they don't have free time, so it's easier for them when they're offered that opportunity, it's just right there," a former farmworker, Arturo Vasquez, who worked in upstate New York, said in Spanish through an advocate affiliated with the Robert F. Kennedy Center for Justice and Human Rights. He said he'd seen Latin American women on farms, as well as Chinese and Russian women.

A victim who asked that Newsweek refer to her as Katarin, the name she used as a prostitute, says she endured years of forced prostitution at farm labor camps. She was only 13 in 2010 when her future pimp approached the park bench where she was sitting in a village near Puebla after finishing her work shift at an ice cream shop. The boy, 16, introduced himself. She thought he was handsome, and after a week they were romantically involved. Three weeks after they met, she went to live with his family in Tenancingo. Five months later, they crossed the border by foot with smugglers into Arizona. Then they took a van to Queens, and three days later, he forced her into prostitution.

Katarin remembers drivers taking her to farms on Long Island, as well as in Delaware, New Jersey and Pennsylvania. She would see 30 to 40 men a day in bunks ridden with bedbugs; many of the men were violently drunk,

and some would use knives or scissors to break open their condoms. “Sometimes they couldn’t come because they were drinking so much, and they would get really mad because the time would be up and they hadn’t finished,” Katarin says in Spanish through Sanctuary for Families. By 2014, she had developed a vaginal infection that left her in unbearable pain, and when her pimp said she had to continue working, she decided to escape. She went to the police, who helped get her to a hospital and a safe house.

Her pimp ran away and remains at large.



A 2010 State Department report identifies identifies the town of Tenancingo, Tlaxcala, as the area of high sex trafficking between Mexico and the United States. Credit: El Universal/ZUMA

Mr. All That

The man responsible for bringing down Antonio’s ring is James Hayes Jr., who oversees the New York office for Homeland Security Investigations. Immigration work runs in Hayes’s family; his grandfather was a customs inspector, and his father worked for the Immigration and Naturalization Service and U.S. Customs and Border Protection. In the mid-1990s, interested in a career in law enforcement, Hayes,

now 41 and a Brooklyn native, chose border patrol over the New York Police Department. From there, he moved to Los Angeles to take down gangs, and he entered his current role in 2009. Since then, he says, his office has rescued more than 250 trafficking victims and made at least 150 trafficking-related arrests.

The case involving Janet's trafficker was one in a handful involving farmworker camps to go to court in recent years. In May 2014, following another bust by Hayes, a judge found two Mexican brothers guilty of running a ring that operated four brothels and trafficked women to farms in New Jersey. The brothers got life in prison, believed to be New York state's first life sentences for sex trafficking. Fifteen other members of the ring faced charges, including one man whose job was to sweep cars for tracking devices. "We saw with both [rings] very sophisticated levels of organization and very sophisticated delineations of responsibilities," Hayes says. Prosecutors believe the brothers' ring started as far back as 1999 and involved hundreds, and possibly thousands, of women.

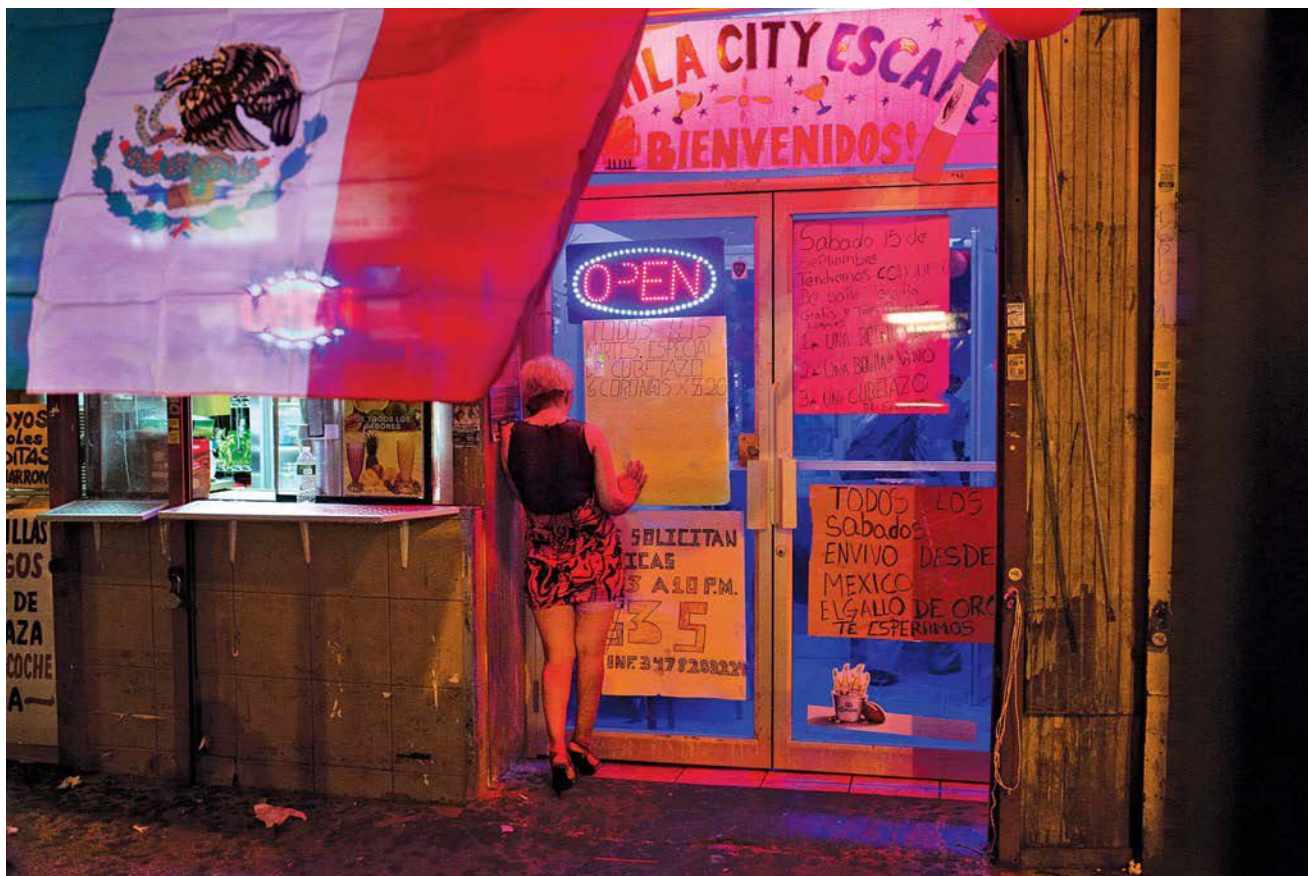
In 2011, Hayes's Homeland Security Investigations counterpart down South, Brock Nicholson, helped bust the brothel in Charlotte where Janet had been shipped. In 2013, the Georgia attorney general announced an anti-trafficking campaign that singled out "rural communities where young girls are trucked in to be abused by farmworkers." And last February, Nicholson's five-year investigation into a Savannah-based ring, dubbed Operation Dark Night, concluded with the conviction of 23 defendants. At least two of the dozen victims Nicholson rescued had been forced to have sex with migrant laborers in sweet potato fields in Georgia and the Carolinas.

The problem exists in the Midwest too. In October, Michigan officials in Lenawee County, a rural area outside of Toledo, Ohio, accused a local man of trafficking two American women in their 20s to farmworkers there. "We've

been investigating [sex trafficking to] migrant farms for years,” says R. Burke Castleberry Jr., the county prosecuting attorney.

Two separate cases, prosecuted between 2011 and 2013, involved transporting women from Queens to farms in Vermont for sex. In one, which involved at least five women, the liaison between the pimp and farmworkers was a caseworker at the Vermont Department for Children and Families. He had taken advantage of the fact that workers depended on him for goods and services, and supplied them with not only clothing, for which he marked up the prices, but also women. His business cards said, “Don Chingon,” which roughly translates to “Mr. All That.” (There may be an added pun, since the verb chingar can mean “to have sex.”) Prosecutors in both Vermont cases failed to prove that the women were trafficking victims, and so the men faced charges related only to interstate prostitution.

Hayes says his office is pursuing dozens of human trafficking cases. “Whether they’re being taken to farms or nightclubs or apartments,” he says, “we’re focused on putting an end to it.”



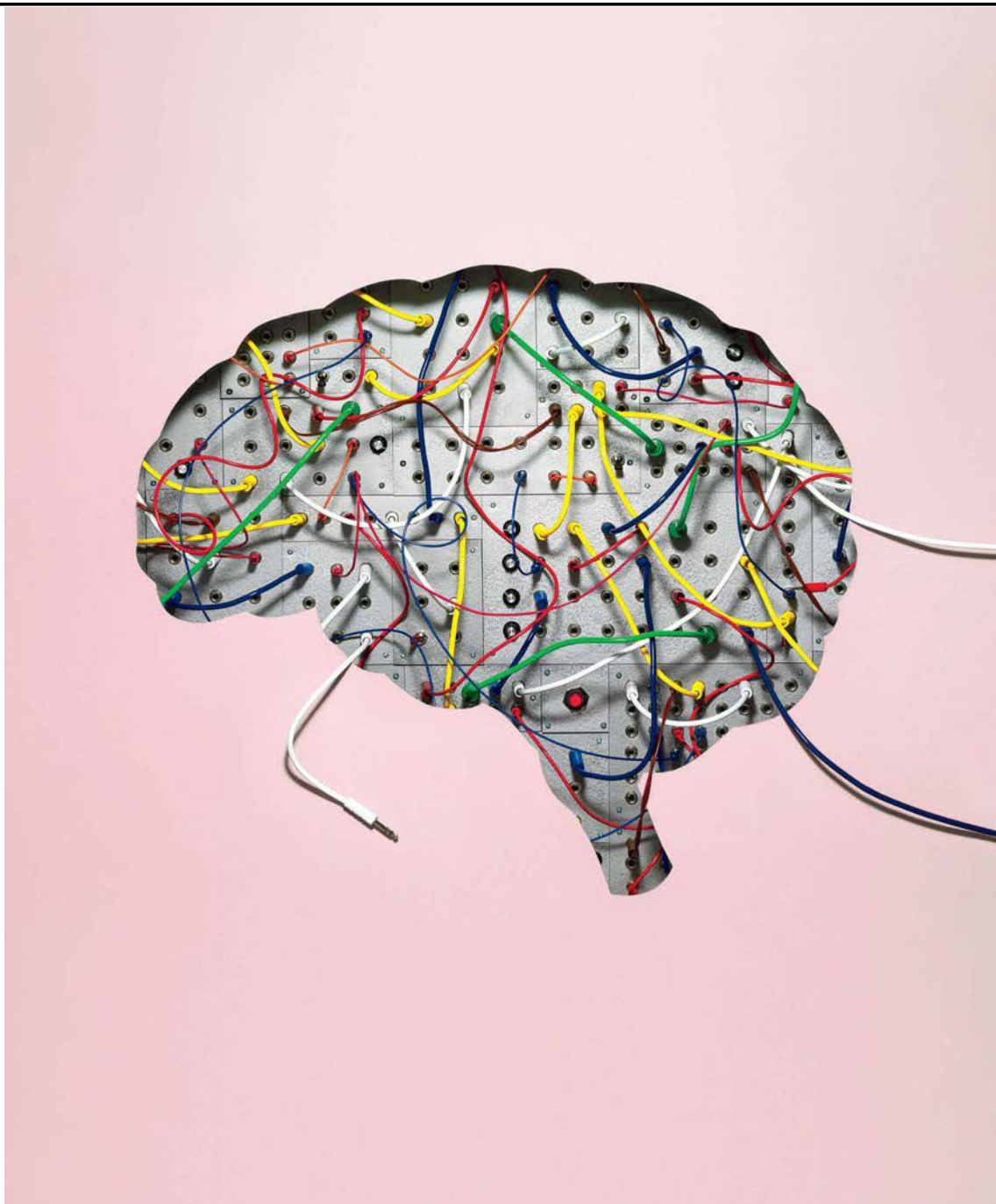
A woman talks on a phone outside the Chila City Escape nightclub on Roosevelt Avenue in the Queens borough of New York, Sept. 15, 2012. Credit: Victor J. Blue/The New York Times/Redux

“I Wanted Love”

It’s been several months since Janet confronted Antonio in court. She sits in a conference room on the 28th floor of a building in midtown Manhattan wearing a black jacket and purple shirt, her hair pushed back with a headband. There are panoramic views, but she focuses on the table in front of her, using a pencil to sketch her childhood home in Puebla. That was where she was happiest and felt safest, a time of blue quinceanera dresses and Christmas turkey dinners. Growing up there, she learned from her grandmother the importance of loving relationships. “I wanted to have a real marriage with love,” she says. “It’s something permanent.”

Seeing Antonio locked up has brought some closure to Janet, now 38, though she continues to struggle with her past. “I lost the best moments of my life, when I could have been with my family,” she said in court. Living in the U.S. on a special visa for trafficking victims, she has reunited with her daughter, now a teenager. These days, Janet attends

counseling and has the support of a boyfriend, though she doesn't tell her friends her full story. She's escaped the clutches of slavery, but knows there are millions of people who are still in chains.



Adam Voorhes/Gallery Stock

BRAIN, HEAL THYSELF

THE SEARCH FOR A CURE FOR MULTIPLE SCLEROSIS HAS HEATED UP AS A GENERATION OF BABY BOOMERS START HEADING FOR BIG TROUBLE

Richard M. Cohen leans forward as the needle plunges into his back. He kvetches as its tip pushes toward his spinal column, though it is a good-natured plaint. He has, after all, been through this before. We are on the far West Side of Manhattan, 57th Street, with the dusky Palisades of New Jersey looming on the far bank of the Hudson River. Right across the street are the studios of CBS, where Cohen, a television reporter and producer, came to work for the

legendary Walter Cronkite in 1979 and then for Dan Rather, who replaced Cronkite two years later.

Cohen went everywhere back in those bygone days when journalists still went to wherever the world was exploding. He reported from Poland in 1981 about the rise of the Solidarity movement, then from Beirut during the Israeli invasion of Lebanon in 1982, then from the conflict in El Salvador. The entire time, he harbored a secret: He had multiple sclerosis, a degenerative neurological disease that afflicts 400,000 Americans and which Cohen calls “a grim pileup on the highways of the central nervous system,” an erosion of the insulating fat, called myelin, that surrounds the nerves. Once those myelin sheaths wear away, the nerves can no longer properly conduct electrical signals, leading to a host of neurological and physical symptoms. Cohen’s walking, for example, eventually became so unsteady that people assumed he was drunk.

Cohen was diagnosed when he was 25. He was living in Washington, D.C., working on a PBS documentary on disability. He was making coffee for his newsroom colleagues when the pot slipped from his hands, crashing to the floor. He thought nothing of it, but then, later that day, he lost his balance and lurched forward into the street. Shaken, he went home to have a beer. As he sat down on the couch, he felt a strange numbness in his leg. “I think you have multiple sclerosis,” Cohen’s father, a physician, said upon hearing his son’s symptoms. He had it himself, after all. So did Cohen’s paternal grandmother.



Richard Cohen, author of book "Strong at the Broken Places" sits in his home on Dec. 13, 2007. Credit: Enid Alvarez/NY Daily News/Getty

“The diagnosis came with a perfunctory phone call,” Cohen wrote in *The New York Times* in 2000 of the day in 1973 when he definitively learned he had MS. “There was no mention of treatment, no helpful advice. I could feel the neurologist's shrug through the wire. I sat alone and in silence. I was only 25, and did not know what to do. No neurologist I’ve come across has much to offer, beyond a few new drugs. I reach out, but with nothing to touch.” Like all those who receive the diagnosis, Cohen had to confront the bleak reality that his brain would eventually give out on him.

Today, Cohen is 66 and retired. His hair is still thick, but it is now fully gray. He walks with a cane, and there is a tremor in his voice. A stud in his left earlobe alludes to a younger self, a self who is aware of the disease festering in his brain but not yet cowed by it. Perhaps worst of all, for a man whose life has been lived in images, he can barely see: The memoir he wrote in 2004 is called *Blindsided*.

Though we met across from the CBS studios where he made his career, Cohen did not choose the location out of

nostalgia. We were at the Tisch MS Research Center of New York, where Cohen is one of the first 20 or so patients to be enrolled in a stem cell therapy treatment pioneered by Dr. Saud A. Sadiq, whom Cohen had met at a conference. The therapy, still in the early stages, harvests stem cells from subjects' bone marrow and transforms them in a laboratory into "neural progenitors." Injected into the patient's spinal fluid, the neural progenitors could eventually lead to the repair of the myelin sheaths in the brain, an organ Cohen calls in his book "that exotic place just north of the neck."

[[nid:303988]]Cohen has been chronicling his struggle with MS on a blog called [Journeyman](#). There, he wrote of his first treatment from Sadiq, which was so uncomfortable he joked about it being "in violation of the Geneva Conventions." Despite the discomfort, the trial appears to be safe. Whether it is effective remains unknown: One critic, Dr. Sally Temple of the Neural Stem Cell Institute, [has said](#) that it "is unlikely that these cells will replenish lost neural cells," because harvested neural progenitors aren't exactly like those native to the body. But after four decades of fighting his own brain, Cohen is willing to take chances, even those that involve long dates with long syringes.

Sadiq's effort is part of a broader push to understand neurological disorders that affect the structure of the brain. As the baby boomers pass into senescence, more and more of that generation's members will be felled by disorders like MS, Alzheimer's (which affects 5 million Americans) and Parkinson's (1 million). "Neurological disorders are going to be a rising tide of trouble," says Dr. Dennis J. Selkoe, co-director of the Center for Neurologic Diseases at Brigham and Women's Hospital in Boston.

Selkoe is the co-director of the Ann Romney Center for Neurologic Diseases, which the former first lady of Massachusetts intends to seed with \$50 million in donations, including a reported "substantial gift" from herself and husband Mitt. Romney was diagnosed with

MS in the late 1990s, and the center's co-director will be her longtime neurologist, Dr. Howard L. Weiner of Brigham and Women's. And to underscore the fact that brain disease knows no political distinction, the center's board will reportedly include both true-blue Democrats, like Massachusetts congressman Joseph P. Kennedy III and Chelsea Clinton spouse Marc Mezvinsky, and high-profile Republicans like Mitt Romney and Fox News host and MS sufferer Neil Cavuto. Also on the board will be Richard Cohen's wife, NBC talk show host Meredith Vieira.

And the push for a cure is folded within a greater mission to understand the brain, a task the White House has deemed one of its "grand challenges," allocating some \$100 million in federal research funds to that effort. The quest has been a long time coming. Selkoe explains that, for many years, a sort of "therapeutic nihilism" afflicted the study of the brain, a helplessness stemming from a lack of knowledge. That, in turn, scared off researchers. "There was only one guy in my medical school class who went into neurology," he recalls. "And that was me."



Neural progenitor cells in a culture medium. Credit: Eye of Science/Science Source

There's a Thief in the House

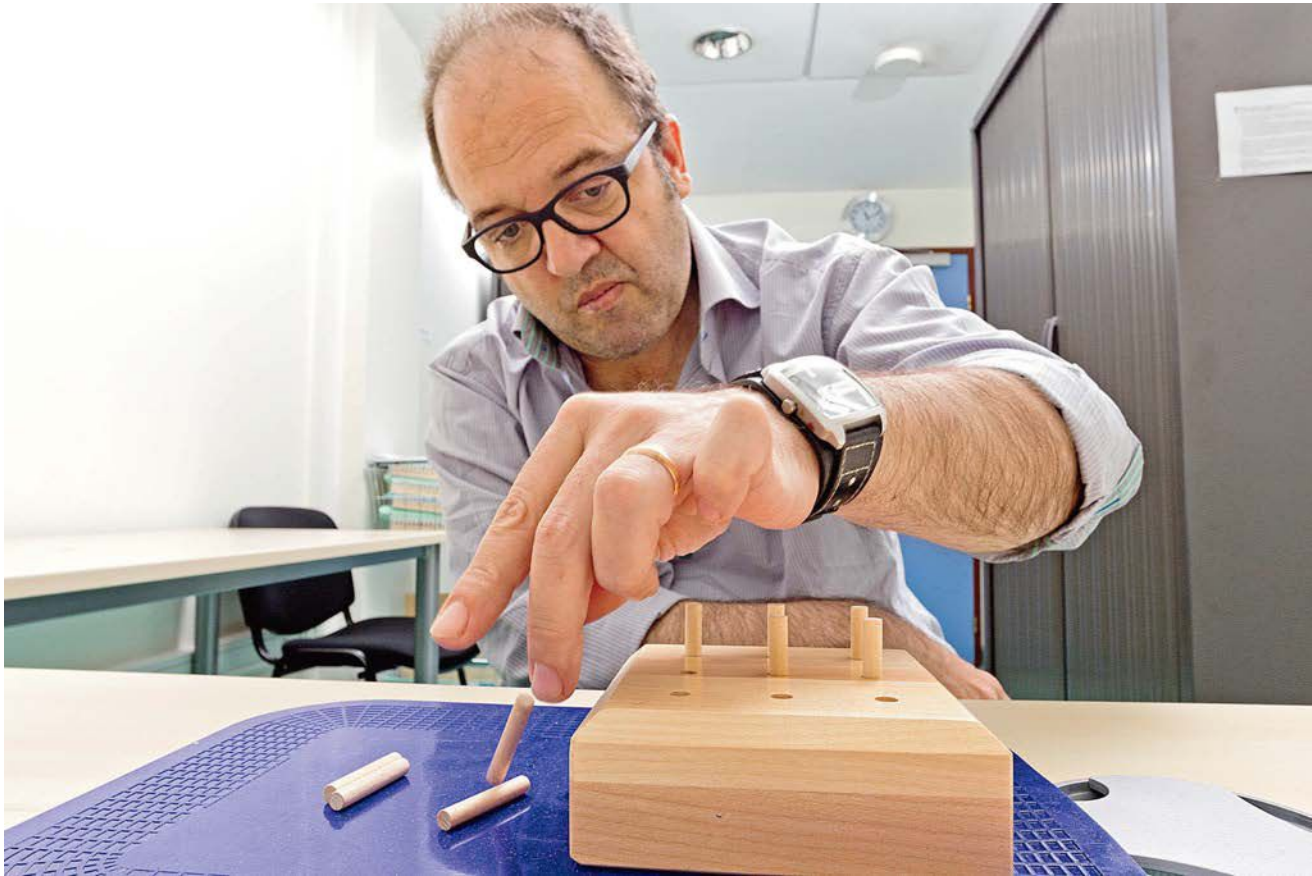
In 1868, French pathologist **Jean-Martin Charcot** described “la sclérose en plaques,” a buildup of lesions caused by injury to the myelin sheaths, the resulting damage to the nerve filaments (called axons) underneath and the scars that form in response. Though others had spotted the effects of MS on the brain, Charcot—often called the father of neurology—was the first to fully understand MS as its own disease (he also discovered amyotrophic lateral sclerosis, or ALS, better known as Lou Gehrig’s disease).

We have learned plenty about MS in the 150 years since. We know, according to Selkoe, that it is “the quintessential autoimmune disorder,” one in which white blood cells (T

lymphocytes, to be exact) cross the usually impermeable blood-brain barrier, eating away at the fatty myelin covering the nerves and thus leading to barren patches that, on a brain scan, are the telltale sign of the disease. We know MS does not have overly high heritability; we do know that there is a genetic component, rooted principally in a family of immune genes called the major histocompatibility complex, though dozens of other genes may have their say. Environment plays a role, too, with a lack of vitamin D seen as a risk factor: MS is more likely to afflict people who live far from the Equator. Smokers are at greater risk too, as are people who've had infectious mononucleosis, or mono.

While the mechanism of some brain disorders—autism, for example—remains poorly understood, we at least know some of what multiple sclerosis does and how it does it. Problem is, that hasn't made it any easier to halt the ravages of the disease, at least in part because most MS lesions produce no symptoms. By the time a person is diagnosed, plenty of damage has already been done, the brain riddled with lesions. We come to realize that a thief has plundered the house, but that chilling knowledge won't hamper his sure return.

The neurologist, then, plays the part of the overmatched but relentless detective, looking desperately for clues. "If MS is an immune disease, then you should be able to have an immune marker," says Weiner, one of the nation's leading authorities on the disorder. He has **called** finding a biomarker that could be discerned by a simple blood test "one of the next major frontiers" in MS research.



A patient suffering from multiple sclerosis in its primary progressive form works on a precision and manual dexterity test. Credit: ASTIER/BSIP/Corbis

Awareness of MS often comes slowly, especially since the vast majority of patients have the relapsing-remitting form of the disorder, which waxes and wanes. (About 10 percent have the more severe primary progressive form of MS, in which there are no such periods of retreat.) The first symptoms may be hardly noticeable: numbness in the limbs, a tingling down the spine when the head is bent forward (a sensation that has its own name in neurology: Lhermitte's sign). But there are no lumps, no bleeding, and one may have plenty of time before the disease strikes again, though strike again it certainly will. In *Blindsided*, Cohen acknowledges that because MS is a chronic, nonfatal condition, it “occupies a lowly position in the hierarchy of suffering.”

The disorder will usually advance haltingly, covertly, slipping past even the hypochondriac who studies the shape of every mole but may think nothing much of the seemingly innocuous tingling in his right arm. That's an unfortunate aspect of the disorder: Dr. Mark S. Freedman, a neurologist

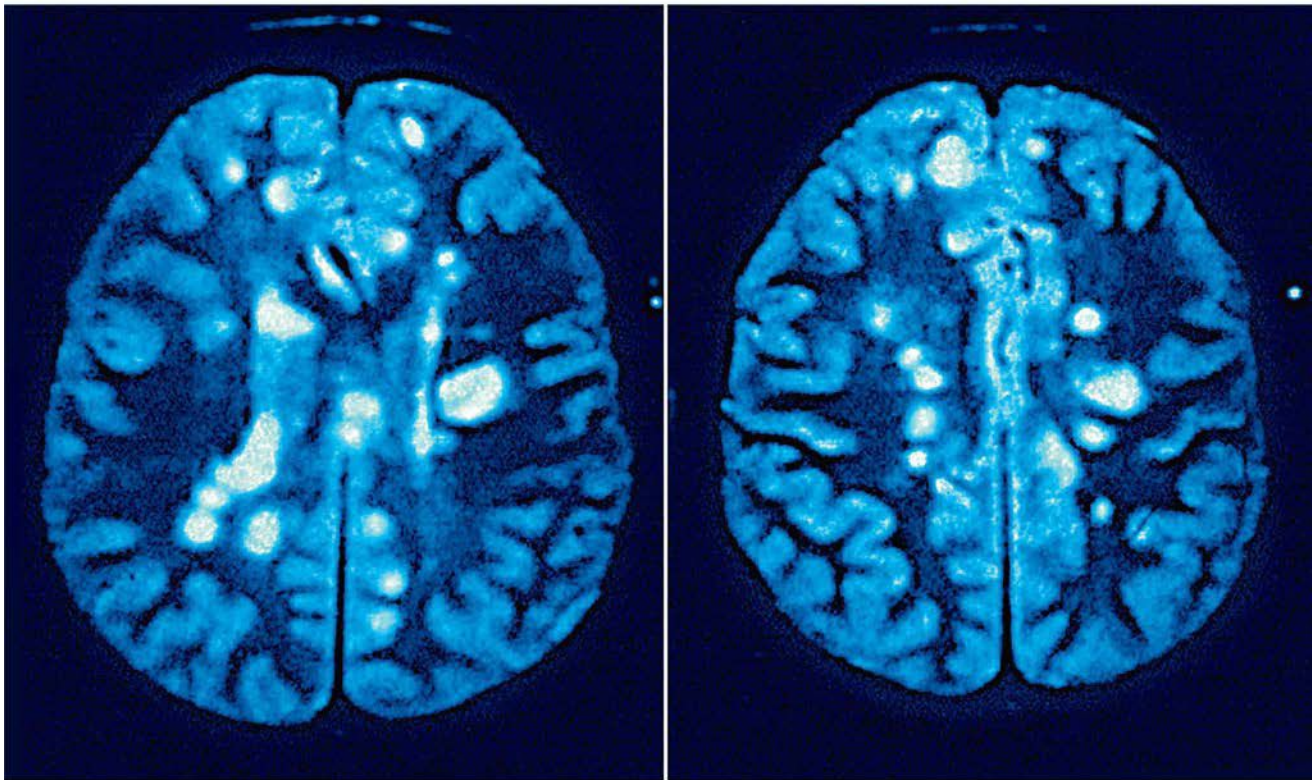
at the University of Ottawa, **has found** that early intervention could have a significant effect in shaping the outcome of MS treatment.

Weiner's team has identified potential biomarkers that could signal the presence of MS, with circulating MicroRNA as one promising agent. A researcher at the University of Geneva, Dr. Cindy Salvisberg, **has discovered** that MS patients have an elevated level of a protein called serpin A3 in their tears. But until large-scale testing confirms either these or others as viable biomarkers, it will take the dropped coffee mug or persistently numb leg for the realization to dawn that something serious is amiss.

Stripped Bare

The breakthrough everyone's after is the one that will heal the brain, not just seal it off from future attacks. The first true therapy for MS appeared in 1993: betaseron, which belongs to a class of drugs called interferons, compounds that disrupt the way rogue T lymphocytes communicate with each other and help keep them from crossing the blood-brain barrier. They are able to slow the progress of MS and perhaps lessen the severity of symptoms. They cannot, however, erase extant ravages. "None of the therapies are restorative or reparative," explains Dr. Rohit Bakshi, a neurologist at Brigham and Women's.

I met Dr. Ari J. Green of the University of California at San Francisco (UCSF), at the medical school's gleaming new campus in the city's Mission Bay neighborhood. Green, an ebullient young South African expatriate, calls himself "Weiner's grandson"—his mentor at UCSF is Dr. Stephen L. Hauser, who was in turn mentored by Weiner. The world of MS research may be bigger than it once was, but it's still not that big.



Myelin, the protective sheath covering nerve cells in the brain and spinal cord is slowly replaced by sporadic patches of scar tissue (sclerosis), thus progressively paralyzing the central nervous system. Credit: Cavallini James/BSIP/Corbis

Green isn't just trying to stop the disease; he is trying to reverse it. He and a colleague at UCSF, Jonah R. Chan, along with several other collaborators, are trying to find a way to stimulate cells called oligodendrocytes, which make myelin, to repair the axons stripped bare by MS. Instead of injecting stem cells, like Sadiq in New York, they are trying to galvanize the body to do the work itself. In August, Green, Chan and their colleagues published a paper in *Nature Medicine* called “**Micropillar arrays as a high-throughput screening platform for therapeutics in multiple sclerosis.**”

The title is daunting, but the premise is simple. A culture dish is dotted with synthetic glass pyramids that act the part of an unsheathed nerve. In a sort of forced prom dance, the pyramids are paired with oligodendrocytes. Then comes the potentially magic potion. Green and Chan wanted to see which compounds could stimulate the oligodendrocytes to wrap myelin around the pyramids.

They applied 1,000 different molecules to the plates, then measured the thickness of the myelin rings. They discovered that no compound was as effective as an over-the-counter antihistamine called clemastine. The same medicine you take to treat a runny nose during the spring allergy season might also play a crucial role in regenerating the brain.

Of course, plenty of study remains: Clemastine may be safe for human use, but that doesn't make it an effective MS therapy. Nevertheless, Green is optimistic, and expects initial results by the spring. He also admitted to some challenges. While Green believes his method is more sophisticated than Sadiq's, he does not know whether in vitro results can be replicated in human subjects.

Others are working to halt MS that is no longer in the intermittent relapsing-remitting stage but has entered a progressive stage in which the brain's degeneration continues at a steady clip. There's "very little we can do about progressive MS," explains Lior Mayo, a young Israeli neurologist who joined Weiner's lab five years ago. He is working on a nasal vaccine, which is intended to enhance the immune system's ability to regulate itself. If his research holds up, there would be no needles, no lengthy infusions, just a quick spray into the rich mucosal lining of the nose. From there, the antibodies would travel to the immune system, where they would fend off attacks on the central nervous system.

Like most of the other researchers I spoke to, Mayo is both deeply hopeful and thoroughly uncertain. The brain, after all, does not easily give up its secrets.



A patient has an MRI scan performed on him in a hospital. Credit: Blend Images/Vetta/Getty

Diagnose and Adios

When the Olympic flame arrived at Salt Lake City for the Winter Games in 2002, it was carried in part by Ann Romney, whose husband Mitt was then heading the city's committee for the event. Romney did not carry the torch for long: a fifth of a mile, perhaps. But it was momentous journey nevertheless, because four years earlier, she had been diagnosed with the remitting-relapsing form of MS. "We were looking at, potentially, us seeing a wheelchair in her future," **her husband told CNN** in the summer of 2012, as the Olympics in London were about to start.

The brief run with the flame in Salt Lake City signaled a turning point in her fight. "That was when I knew I was going to be OK," Ann Romney told me, shortly after she announced the pledge to raise \$50 million for the Romney center.

Romney says she was a "pretty athletic, pretty healthy person," an accomplished equestrian who raised five sons. Her first symptom was a common and seemingly innocuous

one: a numbness in her right leg. She thought it was a pinched nerve. But then other symptoms appeared: loss of balance, fatigue. She described these to her brother James A. Davies, who is an ophthalmologist. His advice was ominous: “You need to call a neurologist.”

Romney went to a major Boston hospital, where “the diagnosis was clear.” But despite that, there was little sense of urgency. “A pat on the head, and call us when it gets really bad,” she remembers, incredulously, of the treatment she got there. “That was it.” (In *Blindsided*, Cohen calls that approach “diagnose and adios.”)

“I remember thinking my life was 100 percent over,” Romney says. On a friend’s advice, she went to see Weiner two months after her initial diagnosis. He immediately put her on a steroid treatment, and though he was able to stop the progression of the disease, he could do nothing about the lesions already blemishing her brain. Romney says that for the next four or five years, she was “hanging on there by a thread,” and even though the progression of her MS has been halted, she says “there’s always a Charlie Brown black cloud” looming over her.

On the day I spoke to Romney, a niece to whom she had been close passed away from complications relating to Alzheimer’s, a disorder that in many ways remains less understood than MS. In addition to those two ailments, the Romney center will focus on ALS, Parkinson’s and brain tumors, which have more in common with neurological diseases than with other cancers.

“There are gonna be some breakthroughs in the next decade,” Romney told me. “I really believe that.”

Romney has been lucky, with some of the finest medical care in the nation keeping her MS at bay. But the disorder has plenty of other prey. Others are now feeling the first tremors of multiple sclerosis, the initial numbness, the

suspicious tinge. They, too, will need someone to help them run again.



Reuters

ANATOMY OF A CIA ASSASSINATION

BEFORE THERE WAS OSAMA BIN LADEN, THERE WAS IMAD MUGNIYAH, HEZBOLLAH'S TERRORIST MASTERMIND. THIS IS HOW THE CIA TOOK HIM DOWN.

Before there was Osama Bin Laden, there was Imad Mugniyah, Hezbollah's terrorist mastermind.

He was called the "father of smoke," because he disappeared like a wisp after engineering his spectacular terrorist attacks, including two that took the lives of hundreds of Americans in Lebanon in 1983 alone.

By most accounts, Imad Mugniyah killed more Americans than Al-Qaeda before most people had even heard of Bin Laden. By the mid-1980s, he topped the FBI's Most Wanted list. But to the CIA, especially, he was public enemy No. 1 — Mugniyah engineered the 1983 obliteration of the American Embassy in Beirut, which killed legendary CIA Middle East hand Robert Ames — and directed the kidnapping and murder of Beirut CIA station chief William Buckley. Mugniyah was also credited with quarterbacking the bombing of the Marine and French paratrooper barracks at the Beirut airport in 1983, the 1985 hijacking of TWA flight 847 — which resulted in the death of U.S. Navy diver Robert Stethem — and a score of other kidnappings and assassinations. He was also suspected of orchestrating two bombings in Buenos Aires, the first on the Israeli embassy in 1992, and the second at a Jewish community center two and a half years later.

But in February 2008, the CIA caught up with the terrorist kingpin in Damascus. A powerful car bomb liquidated him in the same way he had killed so many others.



Families walk among destroyed Israeli tanks while attending an exhibition in Nabatye, Lebanon, Aug. 26, 2008. Credit: Bryan Denton/The New York Times/Redux

Media reports fingered Israel's legendary Mossad for the hit. But according to former U.S. intelligence officials interviewed by Newsweek, the Mugniyah hit was a CIA operation, authorized personally by President George W. Bush and carried out by the CIA under the direct supervision of then-director Michael Hayden and a very, very small group of top CIA officials.

"That was us," said a former official who participated in the project, on condition of anonymity to discuss the operation. "The Israelis told us where he was and gave us logistical help. But we designed the bomb that killed him and supervised the operation."

Said another source, a former senior CIA operative with deep Middle East experience: "It was an Israeli-American operation. Everybody knows CIA did it—everybody in the Middle East anyway." The CIA's authorship of Mugniyah's bloody death, the operative said, should have been told long ago. "It sends the message that we will track you down, no

matter how much time it takes,” he said. “The other side needs to know this.”

GO WITH GOD”

Mugniyah’s death warrant may have been signed as far back as the Reagan administration, in a presidential “finding” authorizing the terrorist’s capture or assassination after the bombings of the Marine barracks and American Embassy, the former CIA official said. But apparently U.S. counterterrorist operatives couldn’t find him.



The American Embassy in Beirut, Lebanon, lies in ruins following a car bomb, April 19, 1983. Credit: AP

In 2007, however, Mossad’s then-chief, Meir Dagan, tipped the CIA off to a Mugniyah hideout in Damascus, said another source involved in the hunt.

“Dagan said basically, ‘We have acquired the location of him and we know that he has a lot of American blood on his hands and so we would like to offer this up to you in terms of what would you like to do with him?’”

Dagan did not respond to a request for comment.

On the CIA's seventh floor, Hayden convened a discreet meeting on Mugnyah. The initial discussion group was at first limited to Hayden's deputy, Steve Kappes; Michael Sulick, boss of the Directorate of Clandestine services (the agency's spy corps); and Mike Walker, chief of the Near East Division; and a few aides.

(When queried by Newsweek, the CIA and all the participants named in this story refused to acknowledge any agency involvement in the operation.)

At first, Hayden, a former Air Force general, was excited about the chance to exterminate a man who had killed so many Americans, including some of the CIA's finest officers, recalled one former official. But he soon had second thoughts.

"General Hayden, at first, was all for this," the former official said, "But slowly, or maybe not so slowly, the realization set in for him that he was ordering an assassination, that basically he was putting out a hit. And once he became pretty much cognizant of the fact that he was basically ordering the murder of someone, he got cold feet. He didn't fancy himself as a Corleone."

And he wasn't, really. That role would ultimately fall to the president.

"Obviously [Hayden] had to get authority for this, and authority could come from only one person, and that would be POTUS," said the participant. "So he went down to see President Bush. It took Bush apparently only about 30 seconds to say, 'Yes, and why haven't you done this already? You have my blessing. Go with God.'"

A **ban on assassinations** had been in place since 1975, but evidently suspected terrorists weren't protected by it. (Bush's former national security advisor, Stephen Hadley, refused comment when contacted by Newsweek last year.)

CHOOSING A WEAPON

On the seventh floor, planning for a hit lurched forward. CIA Acting Counsel John Rizzo green-lighted the project, an authoritative source said. The group tossed around various assassination scenarios involving poison or a rifle shot, but discarded them as too difficult or risky in Damascus, a city tightly controlled by President Bashar al-Assad's secret police.

"Shooting—you got to make sure he's dead, for one thing," a participant said. "You got to get close to him. And how do you get the shooter out? Even if it's a sniper from aways out, there's got to be an egress route for the person, or persons, to get out before the Syrians shut the area down. So that was ruled out."

"There was no way to capture him," the source added. "I mean, what would you do with him? So it came down to being a kill operation."

The decision was made to use a bomb. But what kind? Weeks, and then months, passed as the CIA's bomb technicians presented Hayden with various devices. They were all too big.



President Bush and Air Force Gen. Michael Hayden, right, speak to the media, May 8, 2006, in the Oval Office at the White House after Bush announced Hayden was his choice to replace outgoing CIA Director Porter Goss, who abruptly announced his resignation. Credit: Ron Edmonds/AP

Frustration was building, both inside the building and out. In Israel, the delays were “driving Dagan and Mossad absolutely bonkers,” said a participant in the planning. “If it was up to them, he would’ve been dead long before this. Because of all the controls, it was taking a long time.”

Bomb experts in the CIA’s Office of Technical Services were being sent back again and again, on Hayden’s orders,

to make a device that would limit its lethal blast to a small radius.

“It went from being a traditional car bomb, with a load of C-4 or Semtex or something packed into car chassis, into a very narrowly focused, very tailored weapon, which turned into basically a very large claymore mine, if you will, a shaped charge” hidden in the center of a rear tire mounted on the back of a Toyota or Mitsubishi SUV, a source said. “It was designed to throw out everything in a specific direction.”

Hayden liked the idea. The technicians tested bomb prototypes at a clandestine facility at Harvey Point, near Myock, North Carolina.

Meanwhile, CIA and Mossad agents in Syria were keeping an eye on Mugniyah, the participant said. “We had folks in Damascus and we’re doing this as well, but nobody could do it like Mossad.”

The CIA’s Near East Division, meanwhile, was working on the logistics of getting a bomb into Syria and placing it in a car that Mugniyah would walk by.

“The vehicle would be purchased locally in Damascus,” the planning participant said. “The device would be taken into Syria. Everybody figured we would fly it into Jordan and get it across the border from Jordan into Syria clandestinely.”

But in late December, with the bomb ready and Mugniyah firmly in their sights, Hayden “started to get really cold feet again,” the participant said. He decided to go see President Bush personally—on Christmas Eve 2007, at Camp David.

“On Christmas Eve morning, he and [Deputy CIA Director Steven] Kappes fly up to Camp David to see POTUS, to say, ‘Okay, look, here’s what we got, everything is in place, do we still have the go-ahead?’ And POTUS basically threw both of them out, saying, ‘Why are you up

here wasting my time on Christmas Eve? Get the fuck out and go do this. Not quite in those terms. But it was, ‘Yes, I’ve already given you my approval. Go do this; go with God.’”

Hayden and Kappes choppered back to CIA headquarters and called a meeting in the director’s conference room. With Christmas fast approaching, the corridors were nearly empty.

“He comes back, he holds one last meeting where he got together everyone involved,” recalled a source involved in the planning. “It was mid-afternoon, Christmas Eve. There were not a lot of people in the building. Everyone’s already scooted out for Christmas. But they go over everything one more time: Here’s a device, it’s not too big, it’s not too small...”

Hayden was in his seat at the head of the long, shiny table. A model of the bomb had been placed in front of him, a planning participant said. The real thing had been flown to Jordan.

“He looks at it, asks some questions, and after about a 30-second delay—you could hear the seconds ticking away in the clock of his credenza—he says, ‘Okay, let’s do it.’”



Imad Fayez Mugniyah, a suspected terrorist wanted for his role in planning and participation in the 1985 hijacking of a commercial airliner, is shown in a photo released by the FBI Oct. 10, 2001 in Washington, D.C.

Credit: FBI/Getty

SIX SECONDS IN DAMASCUS

A call came from Jordan the next day, Christmas. The bomb had been successfully driven into Syria. A rendezvous

was made with another CIA operative in Damascus, who took possession of the bomb and installed it on an SUV obtained locally.

Then the waiting began—again.

“One of the things they had to wait for, believe it or not, was for a parking space to open up. There were a couple of spaces outside the apartment building that gave them the opportunity, but there was one in particular that that would be the most efficient, if you will,” for killing Mugniyah, the participant said.

Finally, the car was in place. But then there were always other people around. Weeks more went by. Hayden’s demands that only Mugniyah be killed, and no one else, with no collateral damage, had to be met.

“It was always either he wasn’t alone, or he had his kids with him, or somebody else with him, or there were casualties in the area, or he was gone, he was in the Bekka [Valley] or someplace else, he wasn’t in his apartment,” the participant said. “The rules of engagement were so tight that he probably walked past the thing dozens of times but they just couldn’t do anything because somebody was there or it just didn’t fit into the rules of engagement.”

“They were keeping watch on this just about all the time,” he added. “They were taking shifts, a station officer and a Mossad officer. The Mossad officer was there just to make the confirmation that, ‘yeah, that’s him.’”

The kill was made all the harder by the way the bomb would be detonated. There was a two-second delay from the time the CIA and Mossad agents in the lookout post pushed the button to when the bomb exploded. Under the plan, the Mossad agent would ID Mugniyah, and the CIA man would press the remote control.

“So you would have to count—one, one thousand; two, one thousand...” the participant said. “They had about six seconds from the time he came out of the apartment door to

the time he moved out of the danger zone. So they had to do it really fast.”

Finally, on the night of February 12, 2008, after two months of round-the-clock surveillance, they caught Mugniyah alone.

“They made a positive ID. Click. One, one thousand; two, one thousand...ka-boom. It separated Mr. Mugniyah’s arms, legs, and head from the remainder of his torso, which was catapulted about 50 feet through a window,” the participant said. “It worked exactly like it was supposed to.”

IMPLAUSIBLE DENIALS

Twenty thousand people turned out for Mugniyah’s funeral in Beirut, many screaming “Death to Israel.”

Prime Minister Ehud Olmert denied responsibility. "Israel rejects the attempt by terrorist elements to ascribe to it any involvement whatsoever in this incident," his office said in a statement .

The CIA was pleased with Mugniyah’s murder, but not so pleased as to take credit for it. Agency officials always feared Hezbollah would feel a need to retaliate.

Since Mugniyah’s demise, no Americans are known to have died at the hands of Hezbollah. Experts on the region ascribe that to the organization’s evolution from a guerrilla and terrorist group to a key political party in Lebanon, beginning in 1992. Today, Hezbollah's military arm is fighting the Islamic State in Syria, in parallel with, if not in coordination with, the U.S.

But the group's tit-for-tat war with Israel continues. Last week, Hezbollah ambushed several Israeli vehicles patrolling the Lebanese border, killing two IDF soldiers and wounding seven. The attack was in response to an earlier Israeli air assault that killed an Iranian Revolutionary Guard general and several Hezbollah commanders. One of the latter was Jihad Mugniyah, the son of the legendary terrorist.

At an event to commemorate Jihad Mugniyah's death in Beirut, mourners held pictures of his late father, Imad. They are now buried side by side.

Newsweek senior writer Jonathan Broder contributed to this report



Antonio Bronic/Reuters

INSIDE THE BLOODY BATTLE FOR UKRAINE'S DONETSK AIRPORT

**NEWSWEEK'S REPORTER FILES AN EYEWITNESS
ACCOUNT OF THE BATTLE TO DEFEND THE STRATEGIC
AIRPORT AGAINST RUSSIAN-BACKED SOLDIERS.**

Slavik's voice was laced with panic. "No one is coming for us. We are surrounded by the enemy," he had told me over a crackling telephone line. There were, he said, many losses, many soldiers lying on the floor around him – "some dead, some injured. Commanders need to send in

reinforcements, or start negotiating a way out.” I would get the message out, wouldn’t I?

Over the course of that Saturday 17 January, I spoke to him on two further occasions. It was clear the 22-year-old Slavik had grown more and more terrified as he became trapped in Donetsk airport. “We’ve been looking around for people’s arms so we might stitch them on again,” he had said. By our third call of the evening, Slavik reported that a comrade missing his arm had bled to death. “If they don’t come for us by day break, we are done for. Done for.” That was the last contact I had with him, the last contact anyone had with him.

Slavik was a gifted boy. Growing up in western Ukraine, he never studied properly, but always seemed to do well. He was “an intellectual”, according to his father, with interests from the saxophone to theatre. He studied at the Kharkiv arts academy, but within a year had abandoned college. “He said he didn’t like the way they taught, and it was typical of him – always seeking out injustice to the point of stubbornness”.

Given his circumstances, joining the elite 80th paratrooper brigade in Lviv wasn’t the worst of outcomes, and his father recalls his pride at seeing his son in uniform. But Slavik’s tongue soon got him into trouble. He fell out with superiors after an argument over an armoured personnel carrier he claimed wasn’t fit for service. He ripped up his military contract and went home.

That was in November 2013. By summer 2014, Slavik was receiving terrifying updates from the frontline, where former colleagues were defending Lugansk airport, and had found themselves fenced in by Russian-backed forces. He lost four of his closest friends in the battle, and felt he had to do something. By September, against the advice of his father, he went back to the Lviv training range. “I didn’t want him there – I told him it was a politicians’ war,” his father recalls.

Just before Christmas, Slavik travelled east, eventually ending up in Donetsk airport. Built during the height of the Cold War, Donetsk airport was the epitome of modern design. It covered a huge territory, and provided any number of hiding places within its serpentine grid of tunnels, bunkers and underground communications systems. There were entries into nearby mines, and into Donetsk itself, though much of the network had not been accessed for decades. For the Russian-backed rebels, the airport was an Achilles heel that prevented them from taking full control of the city. “The defence of Donetsk is impossible without the airport,” says Shiba, a deputy rebel battalion commander, using an alias. For the Ukrainian side, meanwhile, the airport had turned into a symbolic Stalingrad, with much war propaganda invested into the image of the indestructible, Terminator-style “cyborgs” who defended it.



Birds fly near the traffic control tower of the Sergey Prokofiev International Airport damaged by shelling during fighting between pro-Russian separatists and Ukrainian government forces in Donetsk, October 9, 2014. Credit: Shamil Zhumatov/Reuters

With the old terminal falling into rebel hands during the December “ceasefire”, the main focus of the January battle

was the new terminal. During the week before it fell, the Ukrainians inside were steadily beaten down to the second and third floors of the building; and then, by Saturday, to just a part of the second floor. “They were crawling all over the place like rats – above, below, and on either side,” says Sasha [not his real name], an injured paratrooper, speaking from his hospital bed. “You could hear them baiting us from behind the walls. They were saying things like ‘time to surrender, Ukies, we’re coming to cut your throats’.”

Throughout that Saturday, there were several attempts to remove injured Ukrainian soldiers from the new terminal, but all were unsuccessful. At about 4am on Sunday morning, however, Ukrainian forces staged a major counter-offensive along the south side of the airport, which allowed a convoy of light army vehicles to retrieve the most seriously wounded. The operation was considered a success, though many Ukrainian soldiers remained trapped in the new terminal. Slavik was one of them. During the battles, military spokesmen claimed government forces were in full control of the airport. Then, some time around midday on Monday, the airport reverberated to the sound of an explosion. According to rebel commander Shiba, the blast was caused by the Ukrainian side “for reasons known only to themselves”.

Evgeny, a soldier serving in the 93rd brigade, sees things differently. “The explosion came from the centre of the hall, perhaps 40m from where we were, and was caused by explosives thrown in through a hole from the third floor, which we simply didn’t control.” All the internal walls were blown away by the blast, he says. Although few died, most soldiers received concussion injuries. An even bigger explosion followed at 3.30pm the following day. All of the supporting walls in the floors above gave way, crushing soldiers among the falling concrete. “We were running out of munitions,” says Evgeny, “but the worst thing was this sense of phantoms flying around you. You had so many

people writhing in agony, moaning, crying for help.” Some of the injured were still shooting from horizontal positions, according to Evgeny: “They realised it was a fight to the end.”

Evgeny himself escaped on foot on Tuesday evening, scampering to safer positions the other side of the landing strip. He was the only one of his original group to make it home. He estimates that of soldiers in the new terminal, at least one third died, and a further third were seriously injured. As of 7.30am on Wednesday, Slavik was still in the new terminal, trapped under the rubble. His father battled his own fears in order to keep his son’s spirits up during a series of short telephone calls. “At the start we had hope. Slavik told me how he’d spoken to a British journalist, and how some deputy defence minister had followed up and assured him that help was on his its way.”

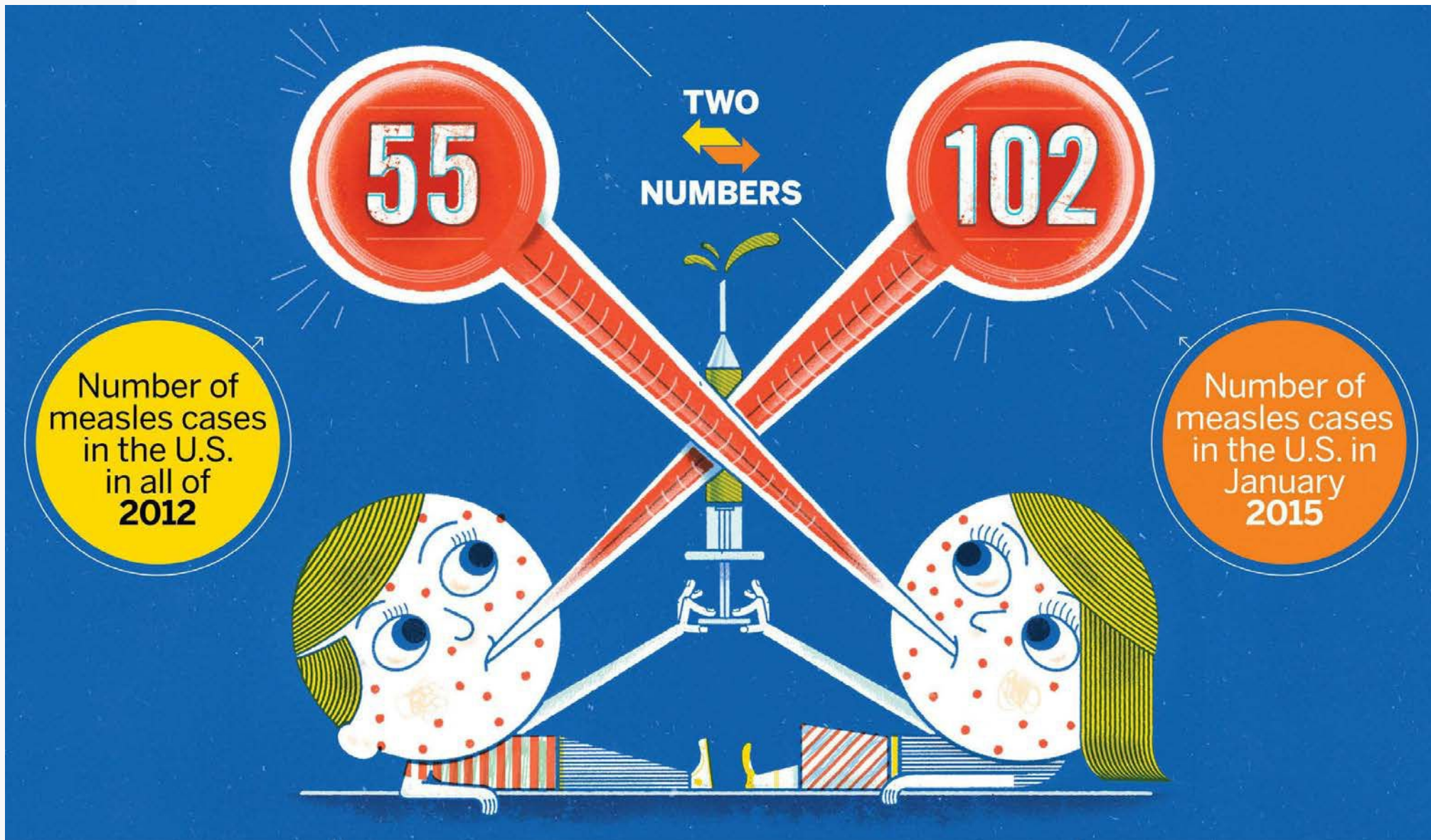
By Wednesday, however, it was clear that Slavik was on his own. “I said to my wife I was going to get the little one,” Slavik’s father says. “I got everything together in quick time – passport, money, papers – and I set off in the car. But I was an absolute wreck and I lost my way four times in the first hour.” He abandoned plans to drive there, and boarded the next train going east.

Some time after 7.30am on Wednesday 21 January, Slavik was captured by rebel forces. The following day he was paraded as part of a column of Ukrainian POWs in front of angry locals in Donetsk. Slavik’s father has been working ever since to secure the release of his son, and has even made an personal appeal to rebel leader Alexander Zakharchenko for mercy. These efforts have been independent and largely obstructed by Ukraine’s security services. “They tell me I’m doing my country no favours, but I’m only doing what a father needs to do,” he says.

Sasha, the paratrooper in hospital, recognises Slavik from the tale, and agrees with the father’s position. “Every one of those soldiers who fought in the airport is a hero.

Sure, Slavik might have been scared, but we were all scared. There was not one second when you weren't completely petrified. What's important is that Slavik didn't leave his comrades behind." Sasha shakes his head and pauses for a while. When he continues, he tells me the airport is an experience he'd wish on no one, but that it wouldn't stop him going back: "Too much blood has been lost. Even now, I see the faces. Those faces . . ."

A young woman, a nurse, appears from behind the soldier's hospital bed. "Your temperature is above 38C. The interview stops now," she says.



Christian Northeast

THINGS THAT GO LITTLE RED BUMPS IN THE NIGHT

**MEASLES, A LEADING KILLER OF CHILDREN
WORLDWIDE, IS CREEPING BACK IN THE U.S.**

The number of measles cases in the United States is climbing, sparking fears the disease may be making a resurgence only 15 years after health officials announced it had been largely eradicated. The latest outbreak, which has infected dozens, is believed to have started in a Disney

theme park in Anaheim, California, and has by now spread to six other states and Mexico. “Measles is so contagious—you can run, but you cannot hide,” says Dr. Sharon Humiston, a professor of pediatrics at Children's Mercy Hospital in Kansas City, Missouri, and associate director for research for the Immunization Action Coalition.

Much of the blame for the recent outbreak has been placed on relatively low vaccination rates among schoolchildren in Southern California. Many parents in that part of the country forgo vaccines they believe to be toxic or a catalyst for illnesses like autism, despite **robust research** debunking those claims. In 2014, **3 percent** of parents in the state submitted personal belief exemptions (PBEs)—which state an opposition to vaccines for “nonmedical reasons”—to get their children out of vaccination requirements. In California’s private schools, the average PBE rate is even higher. The U.S. national average in 2014, by comparison, was **1.8 percent**.

Population-wide vaccination is essential to widespread immunity. What is often lost in the chatter surrounding the vaccination issue is the fact that measles is a serious health threat. Complications range from middle ear infection and diarrhea to pneumonia and brain swelling, which can be fatal. Pregnant women who catch measles are at risk for complications like spontaneous abortion, says Dr. Greg Wallace, head of the domestic measles, mumps, rubella and polio team at the Centers for Disease Control and Prevention (CDC).

The good news is that most residents of the U.S. are relatively healthy and that the country has a robust health care system, which means there is only a small chance the worst complications will be experienced by more than a few. But in parts of the world where malnutrition rates are high and the health care system is less equipped to manage outbreaks, measles is a real public health burden and a leading **killer of children**. The Philippines, for example,

had 21,403 confirmed cases of measles last year. A measles vaccination campaign that began in health centers and churches across the Philippines in September is targeting 11 million children and conducting door-to-door checks to ensure no children have been missed.

U.S. health officials are starting to express concern. “If you look at our 10 largest outbreaks since elimination was declared in 2000, the vast majority of them have been in the last few years,” said Wallace. Last year, 644 people were infected with measles in the U.S., the most since the disease was largely eliminated in 2000 and a 244 percent increase from the 187 cases seen in 2013. The 102 Americans infected in this year’s outbreak are already far more than the total number of people infected with measles in the U.S. in 2012, which was 55.

Before the measles vaccination program started in 1963, the disease was endemic in the U.S., according to the CDC. Three million to 4 million Americans a year caught measles, just under 50,000 were hospitalized, 4,000 developed brain swelling, and between 400 and 500 died.

If the current outbreak continues to grow, the U.S. will need more resources and a greater public health response, as well as better ways to limit exposure and make sure people are up to date on their vaccinations, Wallace said. One positive outcome from the mild hysteria surrounding the Disney outbreak is that the public is more attuned to the dangers measles poses. “I think there is increased awareness, and I think most people are taking that to heart,” he said.



Alfredo Falvo/Contrasto/Redux

WHAT'S IN YOUR IPHONE?

**APPLE SAYS IT DOESN'T USE TANTALUM FROM WAR
ZONES IN CONGO, BUT HOW CAN IT BE SURE?**

Nobody likes to think his or her iPhone was made from minerals derived from a country where warlords and mass rapists profit from the mines. So a year ago, Apple made a bold claim: It had audited smelters in its supply chain and none of them used tantalum from war-torn regions in the Democratic Republic of Congo (DRC).

While Apple acknowledged that it could not make the same claim for gold, tin and tungsten—three other important commodities essential to modern electronics but mined in war zones—the announcement about tantalum was an important step for human rights advocates who have long called for more transparency from international companies.

But how can Apple be so sure?

Experts note the widespread smuggling of ore across porous borders in areas racked by conflict, with scarce paper trails for ore mined by villagers in small artisanal mines in countries where warlords control exports. Moreover, audit procedures at smelters in China and Russia are opaque and vulnerable to corruption. “We’re concerned that the audit procedures are not as transparent as they should be,” says Sasha Lezhnev, who oversees DRC conflict minerals issues at the Enough Project, part of the Center for American Progress think tank.

The disclosure by Apple, which just reported the largest quarterly profit of any company in corporate history, was unusual in that it went beyond a new regulation passed by the Securities and Exchange Commission (SEC) in 2012 under the 2010 Dodd-Frank financial regulation act. That new rule requires U.S. publicly traded companies to audit their supply chains and disclose any use of conflict minerals—but not the names of smelters, as Apple did.

Apple’s data came through the Conflict-Free Sourcing Initiative (**CFSI**), a self-policing, voluntary group created in 2009 to vet smelters for the sources of potential conflict minerals. Backed by Apple, Intel, Microsoft, Hewlett-Packard, General Electric and other major consumers of such ores, the audit program has seen various tweaks to its procedures as it clears smelters in recent years.

Nearly all computers, cellphones and other high-tech gadgets use tantalum, a pearly, blue-gray mineral found in Brazil and Australia but also in Rwanda and the DRC, which has endured what the International Rescue Committee

calls the bloodiest conflict since World War II. More than 5 million people have been killed there since 1998, rape has been used as a weapon of war, and slave labor and conscription of child soldiers are common.

Named for a Greek mythological figure doomed to spend eternity in shallow water, with fruit hanging forever out of his reach, tantalum is traded on a market that is one of the world's most secretive. Tantalite, the ore bearing tantalum, is not traded on commodities exchanges but instead bought and sold through shadowy networks of dealers, so its origins are easily disguised. Refined into coltan at smelters in countries such as China, Kazakhstan and the United States, the mineral is sold to manufacturers that make capacitors, high-tech devices that hold electrical charges and are essential to everything from iPads to airplanes.

In February 2014, Apple for the first time named all the smelters in its supply chain that handle the four conflict minerals (tantalum, gold, tin and tungsten). They were in countries including China, Brazil, the U.S., Japan, Germany, India, Austria, Estonia, Russia and Kazakhstan. It said CFSI audits showed the smelters did not use any tantalum mined in war-torn regions in the DRC. This month, Apple is expected to disclose fresh details on CFSI audits of its smelters.

Last November, Apple said that of the 219 smelters it uses globally to process gold, tin, tungsten and tantalum, 106 were fully compliant, 55 were in the process of being audited, and 58 fell into the sketchy we-don't-know category. The figures show progress—more smelters refining clean metal or undergoing audits to ensure they do—compared with just six months earlier, when Apple said that of the 186 smelters it used for the four metals, just 59 were compliant, 23 were undergoing audits, and 104 had not participated in audits.

“CFSI has successfully lured some metal processors into the gaze of public scrutiny,” says Sophia Pickles,

who oversees Congolese conflict minerals issues at Global Witness, a global-development advocacy group. But, she adds, “the scheme risks being seen as a green-washing, ‘tick-the-box’ exercise.” She was referring to various steps in CFSI’s lengthy audit procedures that allow auditors to scrutinize smelters to check off various areas of compliance—such as spot checks on paperwork, and interviewing smelter employees. Such procedures fall short of global standards set by the Organisation for Cooperation and Economic Development because they do not require smelters to publicly report on risks uncovered or any corrective steps.

Some 6,000 companies, in industries ranging from telecommunications to health care, are expected to spend an initial \$3 billion to \$4 billion to comply with the new SEC rule, and up to \$609 million annually after that, according to SEC estimates. So when barely 1,300 companies filed initial disclosures last summer, there was some concern and disappointment. With just 23 percent of reporting companies declaring that all of their products were DRC conflict-free, according to Audit Analytics, expectations are higher for this year’s disclosures.

Michael Littenberg, a lawyer at Schulte Roth & Zabel who focuses on legal issues surrounding conflict minerals, says that “right now, the reputational risk is higher” due to disclosures by many tech firms last year that raised expectations of more and better to come. “Big consumer brands” like Apple “are the low-hanging fruit for nonprofits and investor advocates, and they’re increasingly focused on this issue.”

Scrutiny of conflict minerals has increased over the past decade, but the trade remains hard to track. In December 2014, Rwanda disclosed that in 2013 it dramatically boosted tantalum exports to become the world’s largest exporter, shipping out to foreign smelters, mostly in China, some 2,460 tons, 28 percent of the global total of around 8,800

tons. That is more than double 2012's exports, despite the fact that Rwanda has consistently produced around 1,500 tons annually, according to United States Geological Survey data.

The spike deepened suspicions that ore was being smuggled across the border from conflict areas in the DRC. In April 2013, more than two years after the CFSI began auditing smelters, Global Witness reported that "much of the tin, tantalum and tungsten produced in North and South Kivu" in the DRC "benefits rebels and members of the state army. The minerals are smuggled out of Congo into Rwanda and Burundi for export. Tin and tantalum smuggled into Rwanda is laundered through the country's domestic tagging system and exported as 'clean' Rwandan material."

The CFSI audits of smelters rely on a screening initiative created by the International Tin Research Institute (ITRI) that provides data on the source of the minerals. Although it is run by the global tin industry, ITRI tracks all four conflict minerals, screening mines and allowing local producers to "bag and tag" conflict-free material. But ITRI audits are not made public, and none of the screening initiatives, including the CFSI, have undergone third-party reviews.

"When you think about the context of these mines being primarily artisanal, very informal, there is no paperwork, so what evidence do any of the audits have to rely on?" asks Lawrence Heim, director at Elm Sustainability Partners, a conflict minerals consulting firm in Marietta, Georgia. "At the end of the day, we don't really know what the reality is."

William Quam, an industry consultant in Vienna who in recent years managed 3,800 miners and staff across six tantalum mines in Rwanda and who has also worked in the DRC's North Kivu region, says patchy rollout of the screening initiatives was fueling smuggling—something flagged in a U.N. Group of Experts report last August. "Owning the bag and tag process is more profitable than smelting," Quam tells Newsweek.

Asked about its audit procedures and how it can be sure the tantalum it uses is conflict-free, Apple declined to provide an official for an interview or to answer on-the-record questions sent by email.

Rob Lederer is executive director of the Electronic Industry Citizenship Coalition, one of the industry groups that developed the CFSI. He says: “While we cannot certify specific sales or shipments as conflict-free, we do provide assurance to companies that their smelters have procedures in place to source responsibly.”

In June 2010, Apple co-founder Steve Jobs admitted the depth of the problem in a widely disseminated email sent to a reporter at Wired magazine: “Until someone invents a way to chemically trace minerals from the source mine, it’s a very difficult problem.”

Other tech companies have complied with the SEC regulation by admitting that they just don’t know. Dell says on its website that “the mining of these minerals takes place long before a final product is assembled, making it difficult, if not impossible, to trace the minerals’ origins. In addition, many of the minerals are smelted together with recycled metals, and at that point, it is virtually impossible to trace the minerals to their source.” Taser International said it could not determine whether conflict minerals used in almost all of its products came from DRC conflict areas.

The SEC rule, unusual in that it puts the agency in a humanitarian watchdog role, requires only transparency and that companies conduct a “reasonable country of origin inquiry.” It does not require companies to do anything about their suppliers, as long as they are open with investors and the public about them.

Even parts of that requirement are being challenged. Last April, a Washington, D.C., federal appeals court struck down the SEC rule’s requirement that some reporting companies might have to disclose their products as not found to be DRC conflict-free. The ruling came in a lawsuit

brought against the SEC in May 2013 by the National Association of Manufacturers, the U.S. Chamber of Commerce and the Business Roundtable, all powerful trade groups. They argue that the disclosure requirement violates the First Amendment right to free speech by forcing some companies to publicly wear a scarlet letter and to make a “forced confession that a company has blood on its hands,” court papers say.

However, the outlook remains uncertain after an appeals court decision last November to rehear the issue. The label “conflict free,” Raymond Randolph, the judge overseeing the case, observed in court papers, “is a metaphor that conveys moral responsibility for the Congo war.”



AP

USING SMELL TO SOLVE CRIME

COULD BODY ODOR LINEUPS SOLVE VIOLENT CRIMES?

Scientists already **know** scent is a strong trigger for memories—more so than any other sense. Now, in a new **study**, researchers are hoping to put our smart noses to use in helping victims of violent crimes identify the culprits.

Everyone who has ever seen a cop drama is familiar with the eyewitness lineup: Victims, relying on visual memories, try to pick out the suspect from a group of randomly chosen strangers. But in recent years, more and more data have

come out suggesting that eyewitnesses show a decreased accuracy in recognizing perpetrators visually, perhaps due to the trauma associated with a frightening event. So forensic scientists have been looking for new ways to help victims identify their perps.

A group of researchers from University of Aveiro in Portugal decided to test scent. The team showed videos of violent crimes to 40 student participants while asking them to take a whiff of a body odor sample taken from the armpits of a donor. Afterward, the students were given five different smelly glass jars and asked to try to ID the B.O. they had sniffed earlier.

They were successful 75 percent of the time—a significant increase from the 45 to 60 percent accuracy rate of the eyewitness lineup. It's not clear why smell made such a difference in the experiment, although the researchers believe it might have to do with negative emotions experienced at the same time as the encoding of the body odor.

Larry Kobilinsky, professor and chairman of forensic science at John Jay College, who was not involved in the study, believes researchers will have a hard time getting this technique into the courtroom. Odor is complex, he explains, and can change from day to day: there are too many variables that weren't accounted for in the study. "I'm not convinced that it's ever going to be found admissible," he says. "How many false positives and false negatives are this technique going to produce? In forensics you're dealing with real life, and just think about the variation that might occur in odor over the course of a single day, let alone a week or a month [until the criminal is caught]."

The researchers point out that "every individual has a unique body odor, similar to a fingerprint," and they did try to control for variation: Before taking body odor samples, they asked the volunteer donors to not wear any deodorant, cologne or partake in any activities that might change their

natural smell. But in real life, of course, you can't exactly ask a criminal to go easy on the aftershave.



NASA/AP

SPACE, THE FINAL STARTUP

**RECENT ADVANCES ARE ABOUT TO PUT
ENTREPRENEURS INTO ORBIT.**

No venture capitalist is crazier about outer space than Steve Jurvetson, who has been listening to unrealistic space company pitches for two decades. In the early 2000s, he helped back SpaceX. But mostly he's impatiently waited for space to turn into Silicon Valley's next playground—the kind of pulse-quickenning, virgin land of hope and opportunity that the Internet once was.

Well, this is space's Netscape moment, **Jurvetson** tells me. As often happens in technology, a bunch of advances in different fields are converging to make space less the final frontier and more like the next startup garage.

In 1995, Netscape's explosive IPO signaled that several technologies—the PC, software, the clunky government-run Internet, Tim Berners-Lee's hyperlinking and Netscape's graphical browser—had come together to create a world-changing new platform. Today, cheap launch capabilities from SpaceX and Virgin Galactic, plus smartphone technology, cloud computing and big data, are keys to the space platform. Space is the new Internet.

This is not about human exploration that might turn **Kepler-186f** into Earth's suburb in five generations. It's about new companies and money to be made 200 miles up in the next five years.

Events have started to unfold quickly. In January, Google and investment company Fidelity **announced** they would pump \$1 billion into SpaceX. Together, the companies plan to put 4,000 tiny satellites into low-Earth orbit to provide global Internet access. Also last month, Richard Branson's Virgin Group teamed with smartphone chipmaker Qualcomm to develop **OneWeb**, which intends to send up to 2,400 satellites into orbit to similarly blanket the planet with Internet.

Over the past decade, both SpaceX and Virgin have been working on building a reusable spacecraft that can take satellites into orbit, drop them off and come back for another load. And both are close to succeeding. That will be a huge factor in making space cheap and accessible. In the old model, every rocket could be used only once, which made getting into space prohibitively expensive. It cost \$300 million or more to launch a satellite, so hardly anyone did it. Imagine if every time UPS delivered a package to your door, the truck then blew up. You wouldn't get many packages.

SpaceX and Virgin can't put up thousands of satellites without developing cheap, reusable launch technology—and, in turn, launching thousands of satellites will help drive down costs and improve the technology.

At the same time, all those launches will provide lots of opportunity for satellite hitchhiking. Jumping into some available space for a ride to orbit didn't make much sense when satellites were at least the size of cars. But the same kind of technology that's put a touch-screen computer in your pocket is helping reduce satellites to the size of a loaf of bread. The cost of both making satellites and putting them up is crashing.

In fact, launching a satellite is going to get 10,000 times cheaper than it is today. "I've never seen something in business where the costs will come down by 10,000 times," Jurvetson says. And the falling cost creates room for something fantastically important in technology: experimentation. One young company, **Planet Labs**, calls this new era "agile aerospace." Planet Labs sends up tiny satellites that gather images and data, and it just closed a \$95 million investment round.

Basically, the once-enormous barriers to building space-based technology are shriveling. That's igniting the imaginations of entrepreneurs, who can now think more about what to do in space rather than how to get there.

SpaceX's Elon Musk, Branson and their partners have presumably run the numbers and found they can serve up connectivity to, oh, a couple of billion people with satellites that cover the Earth. These customers might be folks who live in remote regions. They might also be Iranians who are tired of having their Internet blocked. That could have an interesting impact on world affairs.

True, we've seen attempts at satellite-based global networks before. **Teledesic** and Iridium were both colossal failures in the 1990s. But the platform wasn't right—

satellites and launches were too expensive—and the devices and demand on the ground weren't there yet.

One early and obvious space business is imaging—or, really, big data from imaging. This is where Planet Labs, Skybox Imaging and a few other companies are heading. The idea: Cover the planet with low-orbit cameras that can monitor every crop on every farm or count every car at every Wal-Mart—and do it daily, all over the world. Such information doesn't yet exist. A hedge fund would love to have it. “When launch costs drop, new customers will emerge,” Dick David, chief executive officer of space industry information provider NewSpace Global, told **Fortune**. “But most of the customers that will be interested don't even realize today what impact access to space will have on their business models.”

“And then there's all the stuff we haven't thought of yet,” Jurvetson says. It's hard to see what a new platform will engender. In 1995, Amazon.com sold books, Yahoo was an Internet directory, and a few newspapers started putting stories online. Nobody had heard of blogs, social networks, streaming music or software as a service. Similarly, as it gets easier and cheaper to build a space business, a new generation of entrepreneurs will create technology and applications that would barely make sense to us today.

As some investors point out, swarms of new satellites in orbit will generate business ideas for servicing that ecosystem—like how to revitalize dead satellites or clear out old space flotsam. By that point, business in Earth's orbit will seem so ordinary, we'll see ads for 1-800-GOT-SPACEJUNK on late-night Golden Girls reruns, and that one small step for man will have turned into something more like the Christmas stampede at the Mall of America.



Justin Sullivan/Getty

THE WEST'S FOREST FIRE PROBLEM COSTS MORE EVERY YEAR

THE WEST HAS A BILLION-DOLLAR PROBLEM.

In June 2013, Darrell Fortner was in Denver, an hour's drive away, when one of the worst fires in Colorado's history bore down on his hometown of Black Forest, killing two people and incinerating 486 houses, including his. Also among the casualties were his four German shepherds and five cats. A year and a half later, he's trying not to cry as

he stands next to the handful of graves that run along his property line. Their bodies lay buried in the ground, under a foot of snow, their final resting places marked by brightly colored artificial flowers and small white crosses.

Had he been home that day, when the flames tore through his community, he adamantly believes he could have saved his animals; his house; and the computers, 11 work trucks and equipment needed to run his tree-trimming business. Instead, Fortner, a broad-shouldered man with a big belly and a full head of white hair, is shattered by what he has lost.

Fortner is far from alone in his pain. As the Mountain West gets warmer and drier, there doesn't seem to be any end to what used to be called "fire season." In July 2014, the Carlton Complex Fire in the central part of Washington state burned over 250,000 acres and destroyed 300 homes. Containment costs have been estimated at more than \$100 million. The year before, in 2013, California's Rim Fire outside of Yosemite National Park also burned over 250,000 acres, igniting 100 structures. The firefighting costs alone were upward of \$127 million. June of that same year saw one of the deadliest fires in U.S. history: the Yarnell Hill Fire near Prescott, Arizona, which destroyed 157 homes and killed 19 firefighters.

Dangerous climate conditions are not the only thing to blame for these increasingly costly—and deadly—fires. For most of the 20th century, forest management meant suppressing every fire that ignited. In the long run, that policy led to overgrowth and tightly packed trees, which are much more prone to not only catching flame but burning with increased intensity. That's become a particularly troubling reality because, in recent years, a trend has developed among a certain segment of Americans to move out of cities and into the wilderness—an area known as the Wildland-Urban Interface (WUI)—where 10 million new homes were built between 2000 and 2010. These are people

looking for solitude. Many don't realize, or perhaps don't care, that they've put down roots in the middle of a potential tinderbox.

Protecting all this new construction, as well as the 37 million older homes in these areas, has caused the costs of fighting fires to soar. A report from the U.S. Department of Agriculture's Office of the Inspector General claims that between 50 and 95 percent of firefighting costs are directly related to protecting private property and homes in the WUI. In 2014, that cost totaled more than \$3 billion—more than double what it cost to fight fires a decade ago.

But new residents of these WUI areas often don't think about fire when they move into their homes. There's a feeling that they paid for those trees—and the privacy provided—when they bought the property. So while local fire experts have made concerted attempts to educate people on how to protect their homes, many of their efforts are met with skepticism. "Mountain communities do things their own way," says Kathy Russell, a resident of Black Forest and a longtime volunteer with the local fire district.

Russell is also one of the lucky few whose houses survived the inferno. Well, it was part luck and part preparedness: Unlike many of her neighbors, she thinned back the trees on her property considerably, cutting down many of the smaller ones and removing the lower limbs from the bigger ones. When the Black Forest Fire burned through, "a 200-foot wall of flame came from the west side, but when it hit my property, it was forced to a slow crawl back on the ground," she says. "It went from catastrophic to inconvenient."

Fortner had taken precautions long before the Black Forest Fire. He'd been in the tree-trimming business for 20 years and understood the dangers of living in a forested area. He'd tried to reduce his risk by clearing away trees from his house and doing what he could to make his home more fire-resistant. But Fortner's neighbors weren't as diligent with

their properties. Attempts by the county commissioners and the local fire board to pass regulations requiring the residents to thin their trees and fireproof their property have been met with staunch resistance. Even after the blaze, many locals remain almost hostile to the idea of fire preparedness; a recent push by the county commissioners to enact new, fire-resistant building codes was rejected.

“I think they’re cowards,” Fortner says, referring about the local government. “They don’t have the backbone to [enforce a mandate]. Somebody needs to take control and say, Here’s what’s going to happen, we’re going to protect the people and that’s the bottom line.” He’s considering filing a lawsuit against the local fire board, as well as the state, for negligence.



Damage from the east edge of the Black Forest Fire is seen on June 13, 2013 in Colorado Springs, Colo. Credit: Joe Amon/The Denver Post/Getty

In Black Forest, as in other communities across the West, there’s a general distaste for any authority figure telling people to cut back their trees, let alone how to build their home, where to keep their woodpiles (not next to the house) or what to plant in their yards (native, less-flammable

species). That's why Scott MacDonald, a former firefighter, doesn't think a top-down approach will work. "People will just dig their heels in," he says. Trying to force change could result in even more resistance—MacDonald believes people have to come around to addressing the risks on their own terms.

After leaving the fire department, MacDonald joined Black Forest Together, a nonprofit, grant-funded organization founded by the community's members to help them recover from this last fire—and prepare for the next one. He hopes his group's education and mitigation services will encourage a change in behavior. "When you move out here, you become a land manager," he says. Residents have to understand both the risks and the responsibilities, like clearing space around homes and thinning trees—not just once but repeatedly, over a lifetime.

A growing number of locals have expressed interest in taking action since the fire, but it's scattershot. MacDonald likens what's happening to sewing a community quilt: A couple of squares won't do much good on their own; to be useful, there have to be big, contiguous swaths. People need to be a little less independent and a little more open to working with one another. "You've seen the loss," he argues. "Work as a community and you can help yourselves."

Black Forest might learn from its mistakes. But Ray Rasker, executive director at Headwaters Economics, a nonpartisan economics research firm based in Montana, says the scope of the problem goes well beyond Black Forest. He points out that there are about 70,000 communities at risk from fire in the West. Of those, only about 2 percent have done significant work to reduce the potential of that danger.

To make a real impact, Rasker says, we need to start doing something about the areas that have yet to be developed. Drawing on input from rangers, fire marshals, ecologists and government officials from all over the

Western U.S., he's developed a nine-point plan that would reduce the risk of wildfire by controlling the pattern of future development in the WUI. The most basic step: requiring counties to disclose the fire risk potential to homebuyers. That alone, he argues, will have people thinking twice about building in the WUI.

Other points in Rasker's plan require the political will to enact some unpopular regulations, like getting counties and local governments to pony up for their fair share of firefighting costs. Under the current system, as a fire gets bigger and bigger, it gets kicked up the food chain, from the county fire department to the state and, finally, to the federal level. After a major fire like Black Forest, the state can apply to the Federal Emergency Management Agency and get up to 75 percent of the cost of a fire reimbursed. And that means the bill is being footed by federal taxpayers, most of whom don't live anywhere near the forests of the West.

But in Western communities like Black Forest or Yarnell, Arizona, the decisions about land management and development are being made at the local level. And since the local governments don't have to pay the full costs of firefighting in these high-risk communities, there's no strong incentive for them to change the way they think about fire and land use regulations.

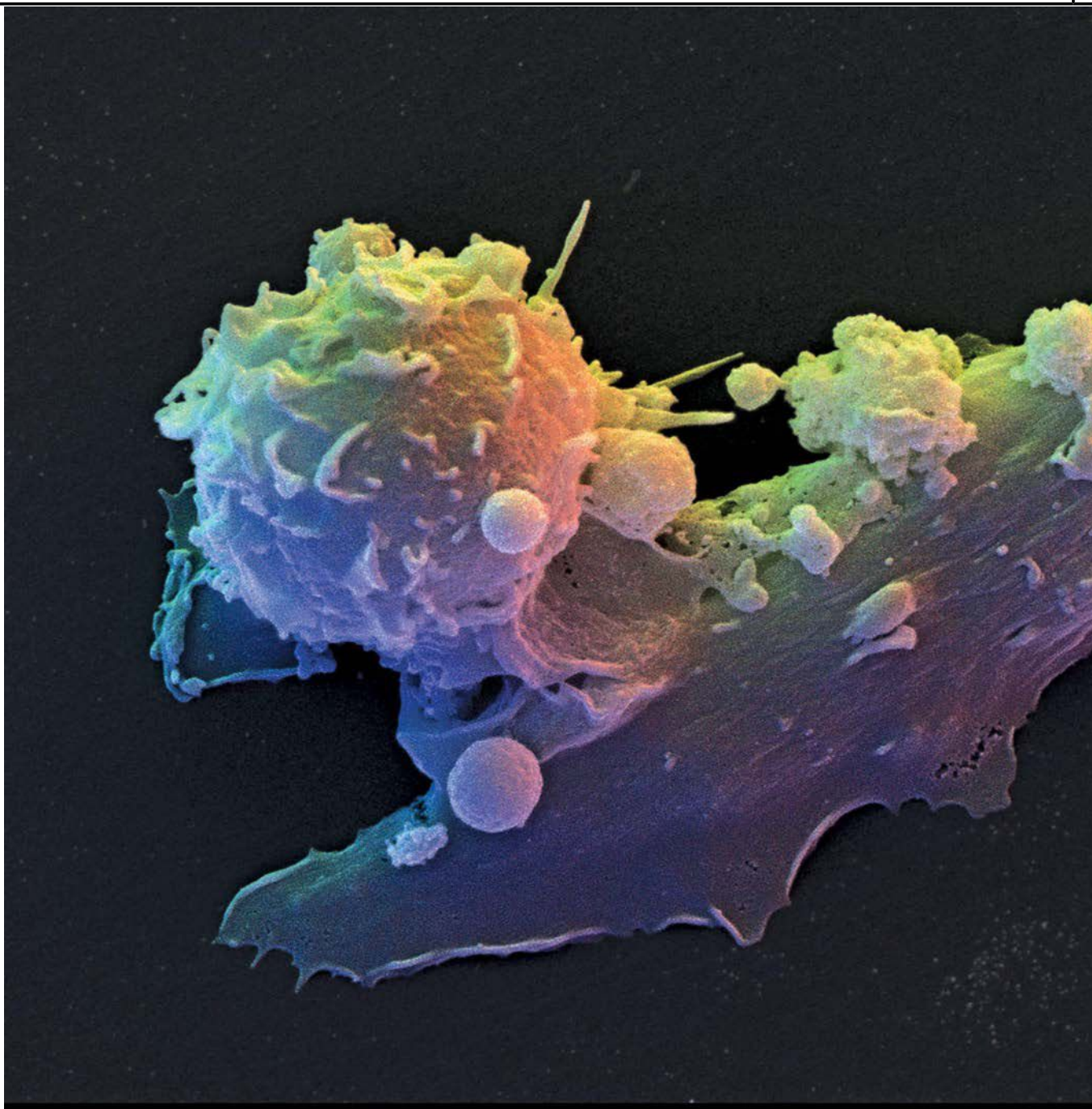
Rasker believes if local governments were required to pay more for the costs of fighting fires, decisions about who can build where (and using what materials) would be a lot more judicious. He points out that if you're a county commissioner and you're looking at a new map for a subdivision, you look at a long list of things—weed control, wildlife impact, sewage, water, sanitation services, roads, schools—before deciding whether to grant the permit. Not on that checklist: Can we afford our share of the potential firefighting cost?

"If it was," he says, "they would think long and hard."

Perhaps the only way to force local governments to consider the true costs of forest fires would be federal legislation that would place the costs at their feet. It's a solution that would be incredibly unpopular and, at least in the short term, a huge burden on local communities. But until there's a shift in who foots the bill, Rasker doesn't expect to see much change.

Any big changes will come too late for Darrell Fortner. He opened his tree-trimming business with just one truck and two chainsaws. He's now back to square one. At 71, the idea of starting from scratch is daunting. Reminders of the fire are everywhere: the twisted, melted engine of one of his pickup trucks, the immense pile of blackened wood in front of his neighbor's house, the heavy machinery slowly demolishing nearby acres of burned trees.

His new house, rebuilt just 50 feet northwest of where his old one stood, is fireproof, with a shale roof, stucco walls and nothing flammable within 30 feet. But it doesn't feel quite right, and he's not sure how safe it is, even now; he talks about giving up the forest life and moving to Florida. There's still more than enough fuel here for two more fires of the same size, and it's only a matter of time before another one scorches Black Forest again.



David Scharf/Science Source

THE MYSTERY OF THE ELITE CONTROLLER AND HOW WE WILL CURE HIV

A POSSIBLE AIDS CURE MIMICS A RARE, NATURAL-BORN IMMUNITY.

I am a millennial, which means that along with my deft technology skills and love for social media, I am also a member of the first generation to have never lived in an HIV-free world since the illness was first diagnosed in

humans. The fact that 1.5 million people die from AIDS-related illnesses every year has been a part of my reality since birth.

One could even say millennials and AIDS have grown up together: As doctors first pulled us from our mothers' wombs, they were also identifying the human immunodeficiency virus as the newest viral threat to the human race. When we learned to walk, scientists learned they could beat back the virus's devastation on the human body with the discontinued cancer drug azidothymidine, better known as AZT. Later, as we were perfecting our ABCs and learning to count, pharmaceutical companies succeeded in perfecting the ideal AIDS "drug cocktail." It was no cure, but it extended and greatly improved the lives of patients suffering from the acquired human immunodeficiency syndrome.

The illness was transformed from a near-certain death sentence in the 1980s to a completely treatable condition by the 2000s. By 2010, great efforts had been made to remove much of the stigma that surrounds the virus and those it infects. Still, despite these advances, the cure for the virus remains elusive. But that might be because scientists have been looking for it in the wrong places.

The Berlin Patient

When HIV enters the body, it targets T lymphocyte cells (T cells) in the immune system. As these vital immune system cells are destroyed, the body is left with depleting defenses. If the virus progresses far enough, the patient will develop AIDS and become more susceptible to an array of pathogens—bacteria, fungi, parasites and other viruses—that a healthy adult body would fight off easily. AIDS patients are also more likely to develop cancer, and live with systemic symptoms of infection (regular fevers, weakness and weight loss, for example). But for every 100 people infected with HIV, one will show nearly no symptoms.

These rare individuals are called “elite controllers” and are born this way due to a unique genetic mutation.

Except, in 2007, science managed to create one. That year, Timothy Brown, better known as “the Berlin Patient,” became the first person to be cured of HIV by being turned into an elite controller.

In 1995, Brown’s life forever changed when he learned he had tested positive for HIV. With the help of his doctors, he was able to control the virus using the relatively new treatment options, until 2006, when his health took another unexpected turn. Doctors informed Brown he had acute myelogenous leukemia, a form of bone cancer. His newest diagnosis was completely unrelated to his HIV status, but if nothing was done, the cancer would surely and swiftly kill him. Brown needed a bone marrow transplant, and in an ingenious move, his hematologist, Dr. Gero Hütter, decided that, rather than using marrow from a donor who simply matched Brown, he would take it one step further and use matching marrow from a known elite controller.

On February 7, 2007, Brown underwent the first of its kind procedure, and HIV history was forever changed. By 2009, tests revealed he was not only cured of cancer but also nearly HIV-free. His body contained only small traces of the virus, not enough for it to replicate or spread in any meaningful way

Doctors are still not entirely sure why Brown was able to develop immunity. Although the same procedure has been repeated on other patients, it failed to produce the same results. Seven years on, Brown remains the only patient to have ever become virtually HIV-free and stay that way.

Virus-Creating Factory

In the past, scientist sought out a cure by killing either the virus or the virus-infected cells. Both of these strategies have failed repeatedly, and will most likely continue to do so: Although antivirals can keep viral numbers down to

undetectable levels, there seems to be no way to completely eradicate a virus from the human body.

But after Brown's miracle story spread, one team of scientists—including Nobel laureate David Baltimore and Hütter, the Berlin Patient's doctor—formed a company, Calimmune, to investigate a new approach. Rather than working to completely rid patients' bodies of HIV, they would try to replicate the experience of the elite controllers—and the Berlin Patient—who continue to have small amounts of the virus in their bodies but experience none of the health consequences, and don't need any of the medications used by other patients trying to control their HIV infection. If they succeeded, they'd have the first true “functional cure” for HIV.

“It's not the virus but how the host controls it that we need to be able to mimic,” says Dr. Magdalena Sobieszczyk, a researcher with the HIV/AIDS Research Program at Columbia University Medical Center in New York.

It's all about the T cell. In order to enter a T lymphocyte cell, HIV must pass through a gene receptor referred to as CCR5. Think of CCR5 as the “doorway” to the cell. Once inside the T cell, the virus takes over and turns it into a virus-creating factory. A patient is considered to be stricken with AIDS when the viral “load” reaches a certain threshold.

In the case of elite controllers, the CCR5 gene receptor is mutated in such a way that the virus is unable to latch onto and enter the T cells. This means the virus is unable to replicate—and its numbers will remain so low that they are nearly undetectable by doctors.

Calimmune's researchers have used stem cell technology to create T cells lacking the CCR5 gene receptor, thus making them resistant to HIV. These manually mutated cells are then reintroduced into the patient's body via an outpatient transplant procedure that is more effective and safer than a standard bone marrow transplant. The latter, says Dr. Scott Hammer, a scientist at the HIV/AIDS research

program at New York's Columbia University Medical Center, is too "toxic" of a procedure to be considered as a general treatment for HIV.

The transplant "gives them a population of cells that are not infected," says Baltimore. These uninfected cells could then either control the virus numbers in HIV-positive individuals or prevent infection in those without it. In other words, the transplant has the potential to be both cure and vaccine. Calimmune has announced it is about to move on to the second half of its Phase 1 human trial, and will soon implant four new patients with its genetically modified stem cells.

Scientists from Harvard have recently succeeded in artificially creating this same CCR5 gene mutation using the relatively new CRISPR gene-editing technology. CRISPR—short for "clustered regularly interspaced short palindromic repeats"—is a mechanism that allows scientists to precisely target and then edit any genes.

Chad Cowan, a researcher involved in the project, says that using CRISPR to edit the HIV patient's own cells in a petri dish and then reintroducing them back into the patient "would provide lifelong immunity or a cure for HIV." This procedure, he says, would "in essence replicate what is happening in elite controllers," and may also be able to reduce the patient's risk of transferring the virus.

To date, the Harvard gene-editing process has been conducted only in petri dishes; animal trials are the next step. Once the procedure has been shown to work in mice, the team would apply to the Food and Drug Administration to launch a Phase 1 human trial to test it for safety.

If it works, there's a chance that anyone diagnosed with HIV will be able to join the rarified 1 percent. Nathaniel Smith, who was diagnosed in 1989, hopes the treatment is perfected before it's too late for him. "I lived in a time when there was no hope, there was no treatment," he says. "People

were told to get their affairs together because they have two years left to live.”

Smith says that millennials diagnosed with HIV today have much more reason for optimism than any previous generation. But he’s got a positive attitude about his future, too. “With all the advancements, I’m hopeful. Anything is possible.”



Tony Gentile/Reuters

FAROE ISLANDS TAKES NORDIC CUISINE TO THE LIMITS

**PUFFINS, WHALE MEAT AND CURED LAMB ARE AMONG
THE TASTE OFFERINGS ON THE ISLANDS.**

I remember the potato. It had looked so ordinary, its bland familiarity a comforting contrast to the spread of unusual delicacies that greeted me upon my arrival in the Faroe Islands, the remote archipelago between Norway and Iceland. While most of the tourists come for the natural

beauty—the windswept vistas, craggy gorges and adorably chubby seabirds—I’d traveled all the way from Tokyo to learn about Faroese cuisine and how it’s transforming into a new style of refined cooking.

Three hours after leaving Copenhagen, I found myself on the edge of a cliff overlooking the tempestuous Atlantic, sitting at a table in a small, wooden hut covered with a turf roof. The hut, used for curing meat and fish, belonged to the restaurant Koks, the area’s top fine-dining establishment, located inside the sleek Hotel Føroyar in the capital city of Tórshavn. A whole leg of skerpikjöt—air-dried and fermented lamb—hung from a rod beside the door, along with aged cheese, pilot whale meat and loaf of garnatálg, a rolled sausage made from sheep’s fat and innards.

The Koks team had wanted to show me the roots of the islands’ food culture. After explaining the region’s specialties, Johannes Jensen, managing director of the Hotel Føroyar, offered me a platter of waxy new potatoes and instructed me to place one atop a canapé of fermented pilot whale and a square of salt-cured whale blubber the size of a pat of butter. “First the whale meat, then the blubber and last the potato,” he said, layering the ingredients on his plate. The whale meat was the color of onyx, arranged in thin slices that resembled black truffles. The translucent pieces of blubber looked like miniature daikon-radish cakes and gave off a faintly floral aroma. The potato was a potato.

“Now, into the mouth,” he said with a chuckle, chewing merrily.

“Into the mouth,” I echoed. Living in Japan, I’d encountered whale before in many guises—raw as sashimi (reminiscent of venison), cured as “bacon” (gamy as well as fishy), simmered in dashi broth (persistently metallic) and marinated in soy sauce and sake before being deep-fried (ironically, my least favorite iteration). But I’d never had it prepared in the traditional Faroese way, hung to dry and ferment in the salty sea air until it’s reached the

consistency of soft jerky. This technique of preserving fish and meat is unique to the islands (before the 1800s, the Faroes didn't produce or import much salt), a result of the region's geographic and climatic conditions as well as the scarcity that has historically defined life on the islands.

Within seconds my palate was flooded with a cacophony of intense flavors. High-toned treble notes of herbaceous and floral flavors were followed by deeply funky, musky earthiness. The texture was thick and oily, and the potato had prolonged the act of chewing it. The experience remains firmly fixed in my memory.

"It's an acquired taste," Jensen shrugged, before adding with a note of concern, "I hope we haven't shocked you."



Fish fillet with radish and red peppers cooked by Fareose chef Uni Gullfoss Credit: Benjamin Rasmussen

Shocked, no. Confounded, yes. But to say that pilot whale was the most unusual thing that I ate during my time on the Faroes would be false. Almost all of the food was

unlike anything I'd ever tasted before. There were turnips so sweet that they reminded me of Asian pears; horse mussels the size of my palm, with orange flesh the texture of custard; and langoustine with crystalline meat that tasted of the sea. Faroese fermented foods offered an entirely different spectrum of visceral flavors: dried lamb laced with the tang of blue cheese, and the indescribable pungency of cured whale meat and blubber. Faroese food culture is a culinary distillation of nature's extremes, a reflection of the contradictions inherent in the environment. On the Faroe Islands, the psychedelic green landscape is veined with streams and waterfalls but nearly devoid of trees. Although the stormy weather regularly turns planes back to Bergen or Copenhagen, the sky can suddenly explode with sunlight, shooting rainbows in every direction.

My fascination with the Faroe Islands began two years ago, when my friend Adrien Norwood, an American chef based in Denmark, mentioned that he was going there to do a pop-up cooking event with the avant-garde Scandinavian chefs' collective NaCL. Thanks in large part to René Redzepi and his restaurant Noma, Nordic cuisine has become a global phenomenon, attracting an unprecedented number of food tourists to Copenhagen and launching offshoots abroad. Noma has even set up shop in Tokyo, albeit temporarily, for a residency at the Mandarin Oriental Hotel from January 9 to February 14. In recent years, New Nordic enthusiasts have started exploring the culinary terrain beyond the Danish capital.

Even so, I'd remarked, the Faroe Islands, with its scant population of 50,000 people, seemed like an unlikely destination for gourmets.

"The products are amazing," Norwood replied, describing the giant cod and succulent langoustines. Almost more intriguing, though, were the idiosyncratic dried and fermented foods, which have been made the same way since the 600s. I couldn't imagine what they tasted like.

“It’s a full-on experience,” he told me. “I don’t think you can duplicate a lot of the things on the Faroe Islands outside of the Faroe Islands. You don’t have the same wind blowing, the same saltwater going through the streams under those little wooden shacks.”

Faroese preserved foods were born of necessity. Winters on the islands are long and frigid, and even during the temperate summer months, very little grows. According to University of the Faroe Islands professor Jóan Pauli Joensen, who has written a book on the local food culture, prior to the arrival of tubers and root vegetables, edible plants cultivated on the Faroe Islands had been limited to a handful of species, mainly barley and the herb angelica, which was the primary source of vitamin C for early settlers. Sheep, fowl and seafood were the archipelago’s most abundant resources. But without a ready supply of timber, cooking with fire was considered something of a luxury.

“Basically, you had drying and fermenting. That’s it,” Joensen said, reminding me that salt was scarce on the islands. The Faroese made “black salt” from dried seaweed, but it wasn’t suitable for preserving food.

In light of these challenges, the idea of creating haute cuisine based on Faroese products sounds like a quixotic endeavor, but Leif Sørensen, the region’s most famous culinary personality and former head chef at Koks, has made it his life’s mission for nearly a decade. When I met him in Copenhagen, he was en route back to the Faroes from Greenland, where he’d been researching how to develop the food culture there.

Over a couple of beers, he described the uphill battle he had faced on the Faroe Islands. The restaurant scene had been nonexistent until 1992, when the prohibition of alcoholic beverages was repealed, and had consisted mainly of steakhouses using imported ingredients. At his first restaurant, he ran into trouble sourcing fresh local fish because the industry was focused on exports. Procuring

meat was equally difficult due to government restrictions. On top of it all, the Faroese guests “didn’t want to come to eat Faroese dishes” because they saw it as “food for poor people.”

But Sørensen is an optimist, although a pragmatic one. While he appears somber at first, he has an easy laugh and a deadpan sense of humor. When talking about the history of food on the islands, a lot of Faroese use two phrases to describe the alternating states of scarcity and plenty that have defined the culinary culture: “It was terrible” and “It was a feast.” Those familiar expressions came up as Sørensen recounted funny anecdotes about the monotonous diet he endured as a child: fish, served fresh and then fermented, and then dried, in an endless rotation. Or dried whale meat “so tough it was like leather.”

When he helped launch Koks in 2011, he tried to “tell the story of Faroese food in a contemporary way” by incorporating traditional ingredients as accents to the dishes. At the same time, he embarked on a project to classify the edible plants that grow wild on the islands and started cooking with seaweed, which, although plentiful, had not been eaten by the Faroese. In a sense, Sørensen has been doing more than telling the story of Faroese cuisine. He’s been rewriting it—and turning a tale of paucity into one of surprising bounty.

Sørensen’s work has paved the way for a new wave of chefs on the islands, including his young protégé, Poul Andrias Ziska, who has helmed the kitchen at Koks since February. When I dined there in late August, the food Ziska served moved through the culinary history of the islands, artfully presenting the region’s staple ingredients. Cubes of beetroot were topped with angelica, while dots of salted fish were piped onto circles of mashed potato. The flavors I’d experienced at the start of my trip made an elegant return: The depth of skerpikjøl was rendered as translucent, feather-light crisps, and a thin layer of garnatálg was roasted over

potatoes in a smoky cheese sauce (fermented whale hadn't made it onto the menu, to my relief).

At the end of summer, the focus was on seafood: crab, veiled in thinly sliced turnips and drizzled with a concentrated crab oil, and langoustine, lightly smoked in hay and quickly pan-fried so that it was still rare in the center. A dish of sweet scallops and cauliflower had been dusted with a fine powder of sea tangle seaweed that gave off a flavor and aroma reminiscent of truffles.

Before leaving the restaurant, I took one last look at the city of Tórshavn below. With its gently twinkling lights and quiet harbor, the view was so different from the chaotic, neon cityscape I was accustomed to in Tokyo. In the distance lay an island shaped like a whale, and beyond that, the rest of the world. I couldn't help feeling that I'd landed at the edge of the earth, a place of improbable possibilities. "I'm sure you would like whale meat if you tasted my recipe," Sørensen later joked. Maybe.



Michael Ochs Archives/Getty

*JOHN COLTRANE'S 'A
LOVE SUPREME' IS
STILL A MASTERPIECE
AFTER 50 YEARS*

THE ALBUM DEFINED ITS ERA AND HAS TRANSCENDED TIME.

On a raw, wet night in early December, Ravi Coltrane walked into the warm glow of center stage before a packed house at San Francisco's SFJAZZ Center. He opened a

notebook on his music stand and began to recite a poem. Through his tenor saxophone.

From the bell of the horn came a clear cadence of syllables, rising and falling intonation, speech-like appeals. Piano, bass and drums churned up undulating waves of sonic support. Fellow saxist Joe Lovano echoed Coltrane's phrases through his own tenor. The conversation grew urgent: call and response, faith and struggle, the black church and the blues. No one in the audience had heard the words Coltrane had been glancing at, but they got the message. The standing ovation lasted several minutes.

"You know, it's kind of a heavy thing to do," he said of the performance. Except when speaking through a saxophone, he's a quiet guy, partial to understatement. It's one way in which Ravi Coltrane is like his father, a man he never really knew but whose name and achievements have shaped and challenged his world.

Almost exactly a half-century before this night, the not-yet-legendary John Coltrane had recited the same poem for the first time—also through his tenor. He was making a new album with a dream team of players later dubbed the "classic quartet": pianist McCoy Tyner, drummer Elvin Jones and bassist Jimmy Garrison. The poem served as the inspirational core for the fourth and final movement of a suite Coltrane had brought to recording engineer Rudy Van Gelder's studio in Englewood Cliffs, New Jersey. In a marathon session that evening of December 9, 1964, the quartet laid down the 33-minute album that startled and redefined not only jazz but other genres. This month marks the 50th anniversary of the release of that recording, often cited as one of the most influential artistic statements of the 20th century. The poem, the suite and the record share the same title, *A Love Supreme*.

For its power and innovations in structure and improvisational style, *A Love Supreme* is a piece that serious players study and revere—but rarely dare to perform.

The subject was almost shockingly personal for a jazz recording: Coltrane's offering of faith and thanks to God. In the liner notes he included the written version of the poem, which begins, "I will do all I can to be worthy of Thee O Lord."

Yet *A Love Supreme* quickly found a receptive audience far beyond jazz wonks and religion-minded listeners. Within a year of arriving in stores in late February 1965, the recording was named Album of the Year by *DownBeat* magazine and nominated for two Grammys. (The following year, *Newsweek* devoted six pages to the new "jazz revolution," identifying Coltrane as a leader.) It is one of the few jazz records to go mainstream, going gold (500,000 copies sold) years ago.

Ashley Kahn, author of *A Love Supreme: The Story of John Coltrane's Signature Album*, says the recording inspired new trends in music and performance, from the minimalist works of classical composers Steve Reich and Terry Riley to the trancelike live solos of the Grateful Dead and the Doors. Among those who have pointed to the record as a source of inspiration, according to Kahn, are REM guitarist Peter Buck, poet/singer Gil Scott-Heron, Joni Mitchell and Bono. *A Love Supreme* has also become a modern meme. As a prop in Don Draper's living room, the album cover's brooding portrait of Coltrane helps evoke the simmering mood of the *Mad Men* era. Now playing regularly in contemporary movie backgrounds and hipster bars, the recording's saxophonic keening reminds audiences that many of the old tensions are still on the stove.

It's a safe bet John Coltrane never set out to disturb the trajectory of music. Low-key and introspective, he plied a dedicated path from unremarkable beginnings in the Philadelphia music scene of the 1940s. Over the years, he added to his church and R&B roots by apprenticing with bands led by Johnny Hodges, Dizzy Gillespie, Miles Davis and Thelonious Monk. Through Davis, Coltrane got

interested in tunes with fewer chords stretching over longer periods. With Monk, he studied a compelling combination of catchy, jagged melodies with bald dissonance. Drugs and booze knocked him off track more than once, but he was also hooked on conjuring a new musical vocabulary.

Through the late 1950s and early 1960s, Coltrane signed record deals and gained attention. His 1961 soprano sax recording of the Sound of Music song My Favorite Things became a hit with mainstream listeners. In other settings, discerning jazz buffs were alternately mesmerized and baffled by his feverish, improvisational explorations and what seemed like public practice sessions of weird scale exercises.

By late 1964, having battled back from a series of dark binges and committed himself to staying clean, Coltrane felt the need to signal his gratitude to the higher being who he believed had saved him. It was a perfect creative storm, an obsessive musical quest colliding with a fervent spiritual urge.

With all the dissection inflicted on *A Love Supreme* over the years by historians and musicologists, virgin listeners might justifiably gird themselves for a dry, intellectual oeuvre. But in this anniversary year, give it a chance. It will agitate your ears.

Drummer Jones opens the first movement with the crash of a Chinese gong, clearly signaling this is not your grandfather's jazz. Coltrane's vocal chanting of the phrase "a love supreme" is followed by his tenor mimicking the words over and over in ever-changing tonalities; it's hypnotic. Prepare to be shaken by frenetic blasts of his hallmark "sheets of sound," then soothed by the short, prayerful utterances of the final, poetic movement. The entire piece is propelled by elements of the blues—intuitive harmonic backdrops, infectious melodic hooks and irresistible rhythms. Above all, like indelible music of any style, it is a flood of emotion. The rule of thumb is two listening

sessions. By the end of the second, most newbies are hooked.

“Fifty years later, you turn it on and listen,” says Randall Kline, the SFJAZZ Center’s executive artistic director, beaming. “It’s as fresh as anything you might hear now.”

“It’s sacred music for us,” says Ravi, thinking back to the performance that included his psalm-like duet with Lovano. “None of us had ever played it before in a performance. There was a message on that album, something for us to receive from John. But to perform it ourselves and to redo it—it was a bit delicate.”

“The prayer we didn’t even rehearse,” recalls Lovano. “Ravi was just reading it, and I was just following and playing as if I was accompanying a singer. It felt really beautiful.”

Remarkably, the younger Coltrane and his collaborators played a new, ovation-stirring interpretation of A Love Supreme on every one of the festival’s subsequent three nights. A few days after the San Francisco tribute, he was back in New York rehearsing his regular quartet for a stretch at the Village Vanguard. No, he said, he had no plans to “take it on the road.” But he was confident that others would commemorate the piece through the year, and predicted people would continue to listen “generation after generation.”

To Kline, the power and longevity of the music comes from its double whammy of challenge and generosity. No doubt it’s difficult at first—that is a saxophone reciting a psalm, after all. But isn’t the challenge part of the lasting appeal? “This is a piece that people would use to work through whatever they were wrestling with,” explains Kline, harking back to flower children and civil rights marchers, who both adopted the song as an anthem. Today its 50th anniversary arrives during another period defined

by division and partisans turning a deaf ear. Think Michael Brown, Eric Garner, Charlie Hebdo...

“It’s about listening,” says Kline. “It’s an invitation—and a means—to listen outside your comfort zone. This is a time when we really need something like A Love Supreme.”



Playmount

THE ISRAEL AIR FORCE AND THE AMERICANS WHO HELPED MAKE IT

A NEW DOCUMENTARY CELEBRATES THE BIRTH OF THE ISRAELI AIR FORCE AND THE AMERICAN PILOTS WHO HELPED BIRTH A NATION.

“With my last name, people are always throwing film ideas at me,” producer Nancy Spielberg says. “But when I read Al Schwimmer’s obituary, who some people call the godfather of the Israeli air force, I knew this had my name on it. Not to use all my brother’s projects, but it was like

Indiana Jones and Band of Brothers and Catch Me if You Can—all rolled into one.”

Above and Beyond, directed by Roberta Grossman, is a moving documentary about the improbable band of mostly Jewish-American volunteers who helped build the Israeli air force and the nation itself.

As the son of an Israeli air force pilot, I grew up seeing black-and-white photos of my father in his glory days. He was tan, thin and handsome and stared directly into the camera. But the reality behind the bravado was quite different. The creation of the Israeli air force and the country itself were miraculous feats of bravery, naiveté, luck and chutzpah.

In 1947 Britain, which controlled mandatory Palestine, realized that a civil war was about to break out between the Jews and the Arabs. It handed Palestine over to the United Nations, which decided to partition it into two states. The Jews accepted the plan; the streets of Tel Aviv erupted with dancing. The Arab states rejected partition; David Ben-Gurion, then head of the Jewish Agency for Israel, knew that if he declared an independent state, the neighboring Arab armies would attack.

The only way to prevent a second Holocaust for 600,000 Jews, surrounded by hostile Arab nations openly calling for their destruction, was to quickly build a modern army with an air force superior to that of the Egyptians. With thousands of traumatized refugees flooding the country, little money with which to buy arms and few soldiers with combat experience, this seemed an impossible task.

Schwimmer, using skills and contacts he'd picked up during World War II, began buying dozens of rickety surplus American warplanes and built an air fleet. Once he had purchased enough second-hand crafts, however, he still needed pilots. His team began recruiting crews, scouring

public records searching for pilots with Jewish-sounding names.

Although most American Jews were not Zionists, one by one the pilots signed on. Some had to convince their spouses, and in some cases their mothers, why they should fly halfway across the world to fight in another war. “I didn’t like being a Jew,” says Gideon Lichtman, a former U.S. Army Air Forces pilot who grew up in Newark, New Jersey, in the film. “What changed me was knowing what Hitler did to the Jews. I was risking my citizenship and possibly jail time. I didn’t give a shit. I was gonna help the Jews out. I was going to help my people out.”

Lou Lenart combated the anti-Semitism he’d faced as a kid by sending away for Charles Atlas’s muscle-building books. “By the time I was 15 years old, nobody was beating me up.” After serving in the Marines in the Pacific Theater, Lenart volunteered to fly for Israel.

Once he had the planes and pilots, Schwimmer’s next mission was transporting the shaky fleet from the United States to Tel Aviv. Not only was there no direct route to Tel Aviv, but doing so would require defying a strict American arms embargo to the region. Nevertheless, the pilots helmed the rickety retrofitted planes from Panama to Brazil to Casablanca to Rome, and paid off anyone who threatened to stand in their way.

When the armies of Egypt, Syria, Trans-Jordan, Iraq and Saudi Arabia attacked, the pilots were still in Czechoslovakia learning to fly their makeshift planes. With an Egyptian force of more than 10,000 advancing swiftly past Gaza toward Tel Aviv, there was no time to prepare. The Israeli air force’s first official flight would also be its first combat mission.

On May 29, 1948, four junk Messerschmitts, led by Lenart, took off toward the Egyptian lines. They represented the entirety of the Israeli air force. When they reached the Egyptian positions, Lenart said a prayer and then dive-

bombed and strafed the enemy's tanks, trucks and munitions. The brazen attack stopped the advance in its tracks and most likely saved the newborn country.

Throughout Israel's 10-month War of Independence, hundreds of Jewish and non-Jewish volunteers flew thousands of missions in ill-equipped planes, low on fuel and short on ammunition. Among other feats, they stopped the Iraqi westward advance into the Galilee and supplied vital supplies to cut-off Jewish communities in the Negev Desert. Perhaps most important, however, was the effect the volunteers had on boosting the morale of the Jewish people, still reeling from the devastation and abandonment of the Holocaust. "It was a godsend," former Israeli president Shimon Peres says of the volunteers.

The war took a heavy personal toll on the pilots as well as Israel, which lost an estimated 1 percent of its population. What shines through in the interviews with the surviving pilots, however, is that these men, now in their 80s and 90s, are relaying exploits from the best time of their lives: a time when choices seemed simpler, their bodies were in peak physical condition, and they were driven by a mission to help their fellow Jews. They partied, picked up girls, got into bar fights and laughed a lot along the way. "I was born to be there at that moment in history," Lenart says. "It's the most important thing I did in my life."

"I finally felt proud of being a Jew," says another pilot.

Despite its dramatic subject matter, *Above and Beyond* is not without its lighter moments and surprises. Milton Rubinfeld, a brash former stunt pilot who flew for the Royal Air Force and the U.S. Army Air Force, was shot down and surrounded by Jewish farmers who, not knowing Israel possessed an air force, assumed he was an enemy. Rubinfeld, who spoke no Hebrew, began screaming Yiddish words and Jewish foods like gefilte fish, pesach and matzo. The improvisation saved his life, and he returned to America

where his son Paul Reubens became the famous comic actor best known for his character Pee-wee Herman.

“It’s not just a Jewish story but an American one,” Spielberg says. “I would love for people to give this movie a chance. If you say Israel to certain people, they turn off because they have a certain image of the country they get from the media. This film reminds of a time when Israel was voted into statehood by the U.N. The Jews accepted the partition, and the Arabs chose to fight. I hope it reminds people that we could have had a two-state solution in 1948.”



Gravitas Ventures

BACKSTREET BOYS TO MEN

**A NEW FILM COVERS THE GROUP'S INEVITABLE
COMEDOWN AND ITS FORMER DOMINANCE.**

It's 10 minutes before I'm going to Skype with the Backstreet Boys, and my 29-year-old self is anxiously pondering a dilemma my 10-year-old self—a BSB superfan—couldn't possibly have imagined: Which wall of my tiny, cluttered New York City apartment do I feel most comfortable letting one of the most successful boy bands in history look at over my shoulder?

Still a household name some 20 years after their first single, the Backstreet Boys — A.J. McLean, Howie Dorough, Nick Carter, Kevin Richardson and Brian Littrell — have recorded a dozen albums, and sold more than 130 million of them worldwide. They've packed amphitheaters and broken records and **danced shirtless in fake rain**. Their eponymous first album was released nearly two decades ago; the most recent, *In a World Like This*, came out in 2013. Now, coming off the domestic leg of their 20th anniversary tour, BSB are headed to the silver screen with *Backstreet Boys: Show 'Em What You're Made Of*, a documentary debuting in theaters and on iTunes and video-on-demand January 30.

In the weeks leading up to my anticipated BSB sit-down (busted down to a Skype chat by Winter Disappointment Juno), the cadre of PR reps coordinating things kept referring to the band as "the boys" — When can I meet the boys? How much time do I need with the boys? — and so the first few minutes of *Show 'Em What You're Made Of* are like waking up from a 15-year coma. Two of the "boys," Dorough and Richardson, are over 40 now. All of them are married; four have kids. In the documentary's opening scene, McLean lags behind the others during a hike in the woods. "It's just going to take me a minute," he grumbles as the guys crack jokes at his expense. "This is really shitty on my knees."

Which isn't to say that the Backstreet Boys are old, just...mature, almost the antithesis of today's coiffed and tattooed teen heartthrobs, the One Directions and Justin Biebers who are themselves the pink slime of boy bands past. Gone are the colored ski goggles, ill-advised hats and oversized hockey jerseys of BSB yore, replaced by demure button-downs and slightly less ill-advised haberdashery. In a scene filmed at the London house where the group wrote *In a World Like This*, Littrell carefully brings Carter a cup of hot tea. Later, he wears an apron while preparing breakfast

for the group. During one rehearsal, Richardson takes to the piano wearing—gasp—cargo shorts.

"We were trying to go at this [movie] from a raw, uncensored perspective," Richardson tells me during our interview (after I've settled on the bookshelf with the brainiest titles as background). "We were not trying to make some fluffy promotional piece."

Somewhat surprisingly, they succeeded. While BSB's early fame is undeniable — cut to footage of girls passing out at packed stadium concerts and scream-crying as they press against the band's tour bus — *Show 'Em What You're Made Of* is as much about the group's inevitable comedown as it is about their former dominance. After the runaway success of 1999's *Millennium* (singles include "I Want It That Way" and "Larger Than Life"), BSB released *Black and Blue* in 2000 (singles include the criminally underrated "The Call"), a compilation album in 2001 and *Never Gone* in 2005. Then a fight over McLean's drug abuse led to a rift between him and Richardson. In 2006, Richardson announced he was leaving the band. McLean, Dorough, Littrell and Carter put out two albums and went on three tours as a foursome, but BSB wasn't the same, and wouldn't be until Richardson officially rejoined in 2012. (Both McLean and Carter credit Richardson with helping them recover from drug problems, and throughout the movie and our interview, he comes across as the group's voice of reason.)

"If you're going to do a real documentary, you have to ignore the cameras," McLean says when I ask whether the guys had a discussion about how much BSB reality they'd share on-screen. "We've aired our dirty laundry over the last 22 years, from me going to rehab to Brian's surgery [Littrell had open-heart surgery in 1998], but there's a lot that our fans don't know."

Carter adds, "We wanted to give our fans another side of us they've never seen before."

Some of that side is hard to watch if you are a fan. In addition to McLean's struggle with addiction, *Show 'Em What You're Made Of* touches on Carter's fight against drug abuse and his estrangement from his parents, as well as the group's fraud and theft suits against BSB founder/manager (and later *NSync creator) Lou Pearlman (who would eventually be convicted for perpetrating a \$300 million Ponzi scheme). Midway through the film, a tense argument over Littrell's current ability to perform at concerts — he has what he calls "vocal tension dysphonia," which tightens the muscles around the vocal chords — is aired in full. (Watching Carter and Littrell yell "Shut the fuck up" at each other across a conference room is another thing 10 year-old me wouldn't have been able to imagine.)

But there's levity, too. Early in the documentary, the guys reflect on a high school performance where they were almost booed off the stage after their PA blew out (with Glee-worthy aplomb, they recover by singing a cappella). And in a later scene, they pop into a ballet class at Carter's former dance school, where the assembled teen girls prove too young to know the "Thriller"-esque choreography from "**Everybody (Backstreet's Back)**." Unfazed, BSB walks them through it.

When the 2013 tour footage starts rolling, the Backstreet Boys look surprisingly non-ridiculous for a group of adult men performing routines they popularized over a decade ago. Despite Littrell's vocal trouble, BSB still sounds great, and their dancing is sharp, a stark contrast to *NSync's brief and **visibly effortful** reunion at the 2013 MTV Video Music Awards. "We had literally a month to put this tour together, and about 19 days of dance rehearsals," Dorough tells me.

In a way, the Backstreet Boys faded into that good pop culture night inconspicuously. Sure, McLean and Carter struggled with addiction (statistically speaking, it would

have been suspect if one of the group members hadn't). But there was no major BSB flameout, and the reassembled group could have probably lived off royalties and cameos until Medicare kicked in. That the group is bothering to still perform — their tour hits Europe, China, Australia and beyond this year — is impressive. That they're recording new music seems almost inconceivable. "Why not just hang it up?" I want to ask, at the risk of offending my top middle school crushes. "One of you **could do Broadway**. Another could **attempt space travel**." Surely there's a BSB opportunity in reality television.

Show 'Em What You're Made Of answers those questions for me. The Backstreet Boys are determined to remain a band, to keep performing and recording, to stay — indefinitely — "the boys." "We don't have a record deal," Carter says, laughing to the camera early in the movie. "It's awesome. It's like starting all over again."

Backstreet's back, alright.

01

ONE JOURNEY'S END

Tokyo - Junko Ishido reacts on February 1 after learning that her son, journalist Kenji Goto, had been beheaded by ISIS militants. Goto had been reporting on the humanitarian crisis in Syria when he was taken hostage in October. Japanese Prime Minister Shinzo Abe had been negotiating for his release, with the help of Jordan, when a video emerged showing Goto's execution. Abe vowed to punish the killers and has asked the parliament to allow for military intervention, pushing his nation further away from its long-standing pacifist stance. Goto's mother urged peace. "It is my only hope that we can carry on with Kenji's mission to save the children from war and poverty," Ishido said. "Kenji has left us on a journey."



02

COLD BLOOD

Donetsk, Ukraine - A pro-Russian separatist soldier looks at the body of a man killed after a shell hit a residential area on January 30. Indiscriminate shelling in rebel-held Donetsk and government-held Debaltseve has led to a dramatic surge in civilian deaths and casualties for both sides in the conflict, according to a report issued by Amnesty International. More than 25 civilians were killed over the last weekend in January, including six who'd been receiving food at a distribution point. For weeks, separatists have made inroads into government-held territory, with the help of weapons that Ukraine says are supplied by Russia. The U.S. is considering supplying weapons to Ukraine's forces.



03

LEFT PROFILE

Nicosia, Cyprus - Greek Prime Minister Alexis Tsipras reviews an honor guard at the Presidential Palace during a welcoming ceremony in the capital on February 2, before a meeting with Cypriot President Nicos Anastasiades. On his first trip abroad as prime minister since his election last month, Tsipras was visiting Cyprus in a ceremonial recognition of the two countries' deep historical ties. The left-leaning Tsipras came into power challenging the European Union's stance on austerity measures in Greece and has spent some of the last week making nice with Germany's Angela Merkel and other champions of reform in his country.



Petros Karadjias/AP

04

RUBBLE RADIO

Kobane, Syria - A Kurdish man speaks into a radio as he surveys the eastern part of the border town on January 28. Kurdish forces recaptured the strategic town near the Turkish frontier on January 26, a symbolic blow to the jihadists who have seized swaths of territory in their brutal onslaught across Syria and Iraq. After more than four months of fighting and hundreds of coalition airstrikes that reduced most of the town to rubble, militant group ISIS was pushed back to about five miles outside of town.



Bulent Kilic/AFP/Getty